B 462450

1817
ARTES VERITAS SCIENTIA
LIBRARY OF THE
UNIVERSITY OF MICHIGAN

DOCUMENTS

OF THE

ASSEMBLY

OF THE

STATE OF NEW-YORK,

SEVENTY-FIFTH SESSION.

1852.

VOLUME 7.

No. 127 TO No. 129, INCLUSIVE.

ALBANY:
C. VAN BENTHUYSEN, PRINTER TO THE LEGISLATURE,
No. 407 Broadway.
1852.

LIBRARY OF CONGRESS
DUPLICATE
EXCHANGED

UNIVERSITY OF CHICAGO
LIBRARIES
266892
MARCH 1930

State of New-York.

No. 127.

IN ASSEMBLY, APRIL 2, 1852.

The Hon. Jonas C. Heartt,
Speaker of the Assembly:

Sir—We herewith transmit to you the report of the undersigned, two of the commissioners, appointed by the Comptroller, under a joint resolution of the Legislature of 1851, to inquire into and ascertain the amount of unclaimed deposits and dividends in banks of issue and deposit and in savings banks within this State. Yours, &c.

ABRAM WAKEMAN,
GEORGE UNDERWOOD.

Dated April 2, 1852.

REPORT.

To the Hon. the Legislature of the State of New-York:

The undersigned, two of the Agents appointed by the Comptroller under a joint resolution of the last Legislature, which resolution is in the words following to wit:

"IN ASSEMBLY,
April 12th, 1851.

Resolved, (if the Senate concur,) that the Comptroller be and he is hereby required to appoint an agent, or agents, not exceeding three, to enquire and ascertain the amount of unclaimed dividends and deposits made prior to the first day of January 1849, in the Savings banks of this State, and of banks of issue and deposit, and that said agent or agents, shall have power to examine under oath, to be administered by said agent or agents, or either of them, any of the officers, directors, or trustees of such bank, or other persons cognisant of any knowledge relating to such dividends and deposits, and shall also have power to examine fully into the books and affairs of such bank so far as such agent or agents, may deem it necessary to attain the object of this resolution: such agent or agents, shall also enquire into and ascertain the securities and value thereof held by any bank of savings for the payment of the deposits held by it in trust as well as the true amount of such deposit. The result of any such investigation and examination shall be reported to the next Legislature within ten days after the session commences.

By order of the Assembly,

R. U. SHERMAN, *Clerk.*

Ordered, that the Senate concur in this resolution.

WILLIAM H. BOGART, *Clerk.*

Beg leave to submit the following

REPORT.

That they received notice of their appointment as said agents on or about the first day of May last, accompanying which was a request that the undersigned should confine their labors to those banking institutions located in the counties of New-York and Kings, and the counties bordering on the Hudson river as far north as Albany and Troy, embracing a territory in which the great proportion of the banks of the State are located.

That the undersigned, as soon after their appointment as circumstances would admit, entered upon the performance of their duties, and with few interruptions have pursued the same until the present time. To accomplish the object sought by the resolution has been a difficult and laborious task: and although the undersigned have accomplished all they could reasonably expect to have done in the time allotted to them, yet they do not claim that their report will present a perfect statement of all the unclaimed dividends and deposits in the banks in their district. It is, however, an approximation to it. The aggregate amount falling short rather than exceeding the reality.

There are sixteen savings banks in the district visited by the undersigned, several of which have been chartered since the 1st January, 1849, and do not come within the terms of the resolution.

In the city of Brooklyn, there are two savings banks. One of which has but recently been chartered. The other, the Brooklyn Savings Bank, was chartered about the year 1828, and the condition of which is as follows:

On the first day of January last this bank had 5,554 open accounts, upon its books, on which there was due the sum of $1,221,509.22.

To meet this sum the bank had the following resources, to wit:

United States and State stock,	$137,600 00
Brooklyn city bonds,.	74,500 00
Bonds and mortgages,	901,450 00
Interest accrued to January 1852	27,115 18
Real estate, including banking-house,	35,000 00
Cash on hand,..	76,561 51
	$1,252,226 69
Leaving a surplus of	$30,717 49

That the deposits, of a date prior to the first day of January 1849, and since which date have remained unclaimed to the first day of January last, amount to the sum of $51,92 .33, being balances due upon 377 different accounts. To obtain this fact, required the examination of all the accounts opened with the bank prior to the first day of January 1849. Whether this amount should be regarded as a correct statement of the unclaimed deposits in the bank, the committee refer to their remarks made in their report upon the bank for savings in the city of New-York, known as the Chambers-street Savings Bank.

That this institution pays interest at the rate of 5 per cent, per annum, payable semi-annually, upon all sums received on deposit.

That although a very great proportion of the funds of this bank, are invested upon bonds and mortgages, yet the mortgages are payable in one year, and are believed to be upon unimcumbered real estate worth double the amount loaned. They bear interest at 6 and 7 per cent, the greater proportion at 7 per cent, per annum. The bank has never sustained any loss whatever in its investments upon bond and mortgage. That the stocks held by the bank bear an interest from 5 to 6 per cent, per annum. That there are three persons connected with the institution who receive compensation, and that the annual expenses of the bank amount to about $4,800. That in the year 1848 this bank sustained a loss of about $15,000, by the peculation and fraud of one of the clerks. That that loss in no wise affected the depositors, inasmuch as the surplus fund in the bank at that time, enabled the bank to meet the deficiency. That with this exception this bank has sustained no loss whatever.

And the undersigned after a thorough examination of the books and assets of the bank and the general method of transacting its business, are of the opinion that the institution is conducted in a safe and practicable manner.

THE SEAMENS' BANK FOR SAVINGS IN THE CITY OF NEW-YORK.

That the total amount of the deposits of this bank on the 24th day of February last, amounted to the sum of $5,014,817.47, and that the resources of the bank are as follows, viz:

485 bonds and mortgages amounting in the aggregate to,	$2,464,056	23
Stocks of the city of New-York,	271,052	00
Stocks of the State of New-York,	167,200	68
Stocks of the United States,	926,000	00
Stocks of the State of Ohio,	629,032	29
Stocks of the State of Pennsylvania,	100,000	00
Stocks of the State of Virginia,	100,000	00
Cash on hand,	161,385	27
	$5,128,726	24
Leaving a surplus of,	$113,908	77
Add amount of real estate owned by the bank,	160,000	00
Total surplus of,	$273,908	77

That there were on the 10th day of January last 410 unsettled accounts remaining on the books of this bank, commenced before the first day of January 1849, and which had remained unclaimed up to the first mentioned date.

The aggregate of these unclaimed accounts amounted to $19,547.61.

A very large proportion of these accounts were opened by sea-faring men, and, as near as the undersigned could judge, about 320 out of the 410 were of that class.

This bank was chartered in 1829, and has been in successful operation since that time. It will be perceived that about one-half of its assets are in bonds and mortgages. These bonds are secured by mortgages upon unincumbered real estate, considered worth double the amount loaned, and bear an interest at 6½ and 7 per cent, per annum about one-half of the whole amount being at 7 per cent. That the bank has never failed in the aggregate to recover the amount loaned upon bond and mortgage together with the interest. The stocks owned by the institution bear interest at 5, 6 and 7 per cent, and that the bank allows depositors, on all sums of $500, or less, 6 per cent interest, and on all sums over that amount 5 per cent, in each case, payable semi-annually. The Institution is about to sell the edifice they now occupy and to remove into a new one owned by them, and that their real estate will be reduced to about $124,000.

That there are eight persons employed in the management of the bank who receive compensation That the annual expenses of the bank amount to about the sum of $12,000, exclusive of rent.

That the institution has sustained no loss whatever, either by way of peculation or fraud, or misconduct or otherwise. And the undersigned after a thorough and careful examination are of the opinion that the institution is safely and prudently managed.

BOWERY SAVINGS BANK.

This bank was incorporated in the year 1834, and has been in operation since that time.

That the assets of the bank on the first day of January last, amounted to the sum of $4,289,603.27, which is invested as follows:

Bonds and mortgage upon unimcumbered real estate in the city of New-York and Brooklyn,	$2,144,144	00
New-York city stock,	545,968	00
New-York State do,	344,963	90
Ohio state do,	363,200	00
United States do,	411,900	00
Banking house and lot,	24,179	94
Butchers and Drovers bank,	250,840	84
Broadway Bank,	51,108	68
Bowery Bank,	51,108	33
Mercantile Bank,	51,097	29
Pacific Bank,	51,097	29
	$4,289,608	27

That the surplus of the bank on the first day of March instant, over and above the amount due to depositors was $225,400.37, of which the banking house and two lots constituted a part.

That the total amount of unclaimed deposits held by the institution on the 31st October last, a date prior to the 1st January, 1849, amounted to the sum of $41,689.09.

It will be perceived that about one-half the assets of the bank are bonds secured by mortgages. These mortgages are upon real estate in every instance deemed by competent judges to be worth double the amount secured by them. The bonds bear an interest at the rate of six per cent. per annum. The stocks owned by the bank bear an interest from 5 to 7 per cent., the greater proportion being at 6 per cent. The bank allows interest to depositors at the rate of 5 per cent. per annum, payable semi-annually on all sums under $500, and 4 per cent. on all sums over $500, and upwards.

There are eight persons connected with the institution, who receive compensation; and that the annual expenses of the bank amount to the sum of $9,400.

That the institution has never sustained any loss whatever through fraud or mismanagement of any of its agents or officers.

GREENWICH SAVINGS BANK.

That the total assets of this bank on the first day of January last amounted to about the sum of $1,778,351.09, and invested as follows:

Real estate,	$15,000 00
Bonds secured by mortgages,	940,370 00
Stocks,	766,250 00
Cash on deposit in bank,	56,731 09
	$1,778,351 09

That with the exception of a surplus of $47,061.58, including banking house and lot, the whole amount was due to the depositors.

That the total amount of the unclaimed deposits remaining in the bank on the first day of March instant of a date prior to the first day of January, 1849, amounted to the sum of $35,[illegible]

The bonds secured by mortgage bear interest at the rate of 6 and 7 per cent., the greater proportion being at 7 per cent. per annum. The mortgages upon real estate in the city of New-York, are deemed by competent judges to be worth double the amount secured thereby. The bank has never sustained any loss whatever upon any of its loans secured by mortgage. The stocks owned by the bank bear an interest at 5, 6, and 7 per cent., the greater proportion being at 6 per cent. The institution pays interest to depositors at the rate of 6 per cent. on all sums of $500 and under, and 5 per cent. on all sums over $500 and under $3,000.

That there are three persons connected with the institution who receive compensation, and that the annual expenses of the bank amount to about the sum of $1,750, exclusive of rent.

This institution has been conducted without any loss whatever either from misconduct of its officers or otherwise.

DRY DOCK BANK.

This bank was chartered in 1848.

The total assets of the bank amounted, on the first day of January last to the sum of $302,512.55; and was invested as follows:

Bonds secured by mortgage on unincumbered real estate in the city of New-York,	$260,000 00
Banking house,	3,721 45
Balance in Bowery Bank,	38,791 10
	$302,512 55

That the surplus held by the bank over and above the amounts due depositors is $5,200, including the banking house, and that there are no deposites remaining in the bank unclaimed at a date prior to the first day of January, 1849.

That most of the bonds secured by mortgages are at 7 per cent. interest.

The institution allows interest to depositors at the rate of 5 per cent. on all sums of $1,000 and under, and 4 per cent. on all sums over $1,000 and under $2,000.

This bank is managed at an annual expense of about $900, there being but one person employed, who receives a compensation, viz: the secretary, who has acted as such since the organization of the bank

EAST RIVER SAVINGS INSTITUTION

This institution was chartered in 1848.

The assets of the bank on the first day of January 1852 amounted to $111,351.57; consisting as follows, to wit:

Real estate, cash value,	$25,000 00
Bonds secured by mortgages on unincumbered real estate in the city of New-York and Brooklyn worth more than double the amount secured thereby,	64,010 00
Interest and rents due and unpaid,	2,836 44
Cash in bank and on hand,	19,405 13
	$111,351 57

The total amount due depositors on the abovementioned day was $109,052.83, leaving a surplus of $2,298.74.

That the total amount of deposits remaining in said bank on the 27th day of February last unclaimed at a date prior to the 1st day of January, 1849, was $2,602.08.

That the bonds secured by mortgages bear an interest with two or three exceptions at 7 per cent. That the bank pays interest to depositors at the rate of 5 per cent. per annum, payable semi annually on all sums under $500, and 4 per cent. on all sums of $500 and upwards.

That the annual expenses of the bank amount to about the sum of $1,000, there being but one person in the employ of the bank who receives a compensation. That the institution has never lost any of its funds either through the misconduct of its agents or otherwise.

THE BANK FOR SAVINGS IN THE CITY OF NEW-YORK.

This bank was chartered in 1819, being the first savings bank ever chartered by the Legislature of this State.

The total amount due depositors by this bank on the first day of January last amounted to $6,790,082.39.

To meet this the bank possessed the following assets to wit:

Funded debt of the U. S. at the par value,.......	$1,798,500 00
Stocks of New-York and other States, do,........	3,661,075 81
Bonds secured by mortgage, ...	1,481,518 10
Real estate (banking house,)...................	30,000 00
Cash on hand uninvestsd, ...	347,029 62
Interest accrued to 1st January, ...	58,043 91
	$7,376,167 44
Leaving a surplus in the bank of	$586,085 05

On the first day of January last the institution had been in operation upwards of thirty-five years, during which period it had opened 141,305 different accounts, and received together with interest $39,179,463.58. During the same period 98,850 accounts had been closed and the bank had paid out $32,387,381 19, leaving 42,455 accounts entitled to a balance of $6,790,082 39, which would average a little short of $160 for each account. It will be readily seen that this is not only the oldest, but the most expensive savings bank in the State.

The extent of the transactions of the institution has embarrassed the undersigned in their endeavors to comply with the terms of the resolution in its examination within the time allotted to the undersigned for the discharge of their duty under the said resolution. When it is considered that a compliance with the resolution would require the personal examination of so vast a number of accounts scattered through forty different ledgers of the largest size, each containing over 750 pages, the extent of the labor requisite to accomplish the object of the examination will in a measure be perceived.

Notwithstanding the difficulties presented, the undersigned commenced their labors with a determination to accomplish all in their power, consistent with the proper attention to the other portions of their district. The result is that through the agency and courtesy of the bank and its officers they are enabled to make a report of the unclaimed deposits remaining in the bank of a date prior to the 1st day of January, 1849, approximating towards correctness.

They report the sum of $268,595.00 as unclaimed deposits within the terms of the resolution.

The undersigned in reporting the above amount as unclaimed deposits, deem it their duty to make the following statement, which will equally apply to other banks.

The resolution requires that the agents should "ascertain the amount of the unclaimed dividends and deposits made prior to the first day of January, 1849." The word "unclaimed," when used in connection similar to the above has an indefinite signification. It is a well known fact that a large portion, if not all, of the funds placed in our savings banks are deposited with the bank solely for the purpose of *accumulation* and with no intention, as is the case with deposits made in banks of issue, of disturbing them for years. Persons holding funds in trust for minors and for other purposes, to avoid trouble and liability to themselves, very frequently resort to these banks for the safekeeping and accumulation of their trust funds. Parents on the birth of a child deposit often a sum in some savings bank for the benefit of such child when attaining the age of twenty-one years or otherwise. And individuals in moderate circumstances often make deposits for accumulation and to remain in the bank until the necessities of age compel a resort to these deposits of their earlier years.

In further illustration of the difficulty of ascertaining precisely the amount of unclaimed deposits in the bank in Chambers street, your committee would state that since the first day of January last, and before the first day of March instant, this bank received more than three hundred books containing accounts of more then twenty years standing. Books are constantly received containing accounts, opened twenty and even thirty years ago, and upon which there has been no transaction down to the presentation of the deposit book, and no transaction even upon the books of the bank concerning such accounts except every six months to carry the interest to the credit of the depositor; occasionally a depositor will appear with his deposit book for the sole purpose of having the interest credited thereon since his last deposit made, perhaps, ten or fifteen years previous. Instances of this kind are continually occurring at all of these Institutions: and therefore, it will be readily perceived that it is impossible either for the officers of the bank or the undersigned to determine accurately which deposits are and which are not *in fact* unclaimed. This can only be done by a statute or law defining and restricting the signification of the *term*: for example, by declaring that all accounts which shall remain in the bank for a period of twenty years or perhaps a less period, and upon which no transaction shall have been had in that time, (that is no drafts or deposits made,) shall be regarded as unclaimed, and the undersigned would therefore call the attention of the Legislature to the expediency of passing some law, whereby it may be explicitly known in judgment of law when a deposit shall be regarded as unclaimed by the person making such deposit.

It will be seen, by the terms of the resolution that this term, "unclaimed," is restricted in its signification to all those "deposits made prior to the first day of January 1849," and (as was believed to be the meaning,) upon which there had been no transaction since that period. This was the construction put upon the terms of the resolution by the undersigned, and all the dividends and deposits coming within this restriction were regarded and reported by them as unclaimed.

This bank allows interest to its depositors at the rate of 5 per cent, per annum, payable semi-annually upon all sums under $500, and 4 per cent, upon all sums of $500 and upwards. That there are eight individuals employed in the bank who receive a compensation, and that the annual expense of the Institution average about $14,000, exclusive of rent. It is a general rule of this bank not to receive sums on deposit of a larger amount than $1,000.

This bank is permitted by its charter to loan upon bond secured by mortgage, to the extent of two-thirds of the value of the property mortgaged: and they are also by the terms of an amendment to their charter passed April 23, 1836, permitted to "accumulate and hold invested a surplus fund not exceeding ten per cent on the amount of deposits."

The undersigned after a careful examination of the affairs of this bank, so far as their time and other duties would admit, cannot withhold an expression of their entire satisfaction of the prudent, economical and safe manner in which the affairs of this institution are conducted.

POUGHKEEPSIE SAVINGS BANK—AT POUGHKEEPSIE.

The total assets of this bank amount to the sum of $50,116.17, Consisting of bonds secured by mortgage and rail-

road bonds,	$48,599 83
Cash on deposit,	1,476 34
Due the bank for,	40 00
	$50,116 17

That after deducting the amount due to depositors, there is a surplus in the bank of $3,460.41.

That the total amount of the unclaimed deposits remaining in the bank of a date prior to the first day of January, 1849, is $1,646.66.

That the annual expenses of the Institution amount to only about the sum of $325.

That the bank allows interest to depositors at the rate of 5 per cent, per annum, on all sums left on deposit.

THE ALBANY SAVINGS BANK.

The assets of this bank amounted on the first day of January last to $954,092.47, consisting as follows to wit:

Amounts invested on bond secured by mortgage, stocks of the state of New-York, United States, Ohio and Kentucky and bond of the city of Albany,	$506,153 01
Deposited in Commercial Bank,	447,939 46
	$954,092 47

That there is a surplus in the bank over and above the demand due depositors amounting to $6,000.

That the unclaimed deposits in the bank prior to the first day of January 1849, amount to the sum of,............ $

That the bank pays interest to depositors at the rate of five per cent, per annum, payable semi-annually.

THE TROY SAVINGS BANK.

That on the 8th day of October last, the assets and property of the bank amounted to the sum of $612,599.02, consisting as follows to wit:

Troy city bonds,..............................	$232 000
Money on deposit in the Bank of Troy,..........	121,280 05
In Merchants and Mechanics Bank,..............	74,147 26
In Farmers' Bank,.............................	74,160 13
In Troy City Bank.............................	74,355 09
Real estate,..................................	36,311 17
Cash on hand,.................................	172 66
	$612,599 07

That after deducting the amount due depositors, there remains a surplus in the bank of $39,556.11, including the real estate.

That the total amount of deposits remaining in this bank unclaimed of a date prior to the 1st day of January 1849, amount to the sum of $1,623.14.

That the bank allows interest at the rate of 5 per cent, per annum, on all deposits, which interest is payable semi-annually, and compounded. That there are but two persons connected with the bank who receive compensation, and that the amount of annual expenses of the institution do not exceed the sum of $2,700.

The undersigned in performance of their duty in the examination of these institutions have felt it incumbent upon them, and they have accordingly in everv instance made a partial examination of the books, accounts, bond and mortgages and stocks of each of the banks, and have also in every instance subjected the principal actuary to a rigid examination, under oath, touching all the matters and affairs of each of the banks, respectively.

And the undersigned are free to say that they all appear to be conducted in a manner which entitles them to the public confidence. With the exception of the Brooklyn savings bank, not one of these Institution has ever lost a dollar by the mismanagement, peculation or fraud of their officers or agents.

The following table exhibits the total amount of the funds of the banks hereinafter mentioned: the total amount of their surplus: the total amount of their unclaimed deposits and the total amount of their expenses:

Name of Bank.	Total assets.	Surplus.	Unclaimed.	Ann. exp'se.
Brooklyn Savings Bank,......	1,252,226 69	30,717 49	51,925 83	4,600
Seamen's Bank for Savings,...	5,128,726 24	273,908 77	49,547 61	12,000
Bowery Savings Bank,.........	4,280,608 27	225,400 37	41,689 09	9,400
Greenwich Savings Bank,.....	1,778,357 09	47,061 58	35,331 30	4,750
Dry Dock Savings Bank,.....	302,512 55	5,200 00	....	900
East River Savings Bank, ...	111,351 57	2,298 74	2,602 08	1,000
The Bank for Savings,........	6,790,082 39	586,085 05	268,595 00	14,000
Poughkeepsie Savings Bank,..	50,116 17	3,460 41	1,646 66	825
Albany Savings Bank, ...	954,092 47	6,000 00	64,089 87	
Troy Savings Bank,..........	612,599 02	39,556 11	1,623 14	2,700
	$21,260,672 46	1,219,688 82	517,048 08	47,875

From the foregoing statement it will appear that there is over $21,260,000, in the ten savings banks, examined by the undersigned, which sum is invested and managed at an annual expense of less than $50,000, being about two and one-third mills per dollar, or five twentieths of one per cent.

Only two of the foregoing banks, to wit: the Seamens' and Greenwich, allow six per cent interest on sums of $500, and under, and five per cent, on larger sums. The Brooklyn, Poughfieepsie, Albany and Troy savings banks pay depositors at the rate of five per cent, and on all sums received on deposit, whether large or small. The other four, to wit, the bank for savings (Chamber street bank,) Dry Dock, East River and Bowery allow interest to depositors, at the rate of five per cent on all sums usually under $500, and four per cent on all sums of that amount and upwards. Their investments usually yield them six and seven per cent. The great proportion of their bonds secured by mortgage, bear (with the exception of the Bowery) 7 per cent interest. When it is considered that the annual expenses of these institutions average only about five twentieths of one per cent, of their deposits, it may be worthy of the attention of the Legislature whether a larger amount than four or five per cent interest should not be distributed among the depositors.

It will be seen by the foregoing table that although the banks have about $21,260,000 in deposit they, at the same time, show a surplus of over $1,219,000. This surplus is made up (after deducting the annual expenses of the bank,) of the difference between the interest received and the interest paid by the bank upon deposits; and the amount of such surplus would be greatly augmented and perhaps at this moment more than doubled, but for the large amount lost to said banks, for premiums paid by said banks for stocks of the United States and of this State for investment for the benefit of the depositors, as required by the charters of the respective banks. If the banks buys a stock commanding in the market a premium of ten to twenty per cent, and retains the stock until it matures and becomes payable, it will receive only the par value of the stock, and consequently the amount paid for preminm, with the interest on such amount of premium, is virtually lost to the bank. All such losses are charged immediately over to the profit and loss account and therefore, to the extent of such losses, the surplus account of any particular bank is diminished; beyond any doubt, over a million, and perhaps two millions of dollars, have been thus charged over in one way and another. Your committee had not time to examine particularly as to the precise amount of these charges to the said account, but estimate the same from statements furnished by the officers of some of the banks, and the examination and inspection of a portion of such profit and loss accounts. It is well worth the attention of the Legislature whether it cannot devise some method, by extending the kinds of investments or securities, whereby the amount now yearly lost to said banks by high premiums paid may be saved for the benefit of the depositors or the State.

Most of these banks are under the immediate control of a board of trustees or managers, aided by a secretary, treasurer, accountant and clerk. The business of three of these banks is so small as to require the employment of only one person in the transaction of their business, except on deposit days when usually one of the trustees is in attendance.

When several persons are employed in the management of such institutions they are believed to operate as checks upon each other. Hence greater security arises. The defalcation which occurred in the Brooklyn Savings Bank, before mentioned; was the result of the institution then being almost entirely under the active control of but one person.

When these institutions are therefore increased beyond the real wants of the community, they either become useless or are diverted from the original design for which they were intended.

In relation to banks of issue and deposit in the district assigned to the undersigned, after having made the examination contemplated by the resolution, they report as the result of their investigation the following sums as unclaimed dividends and deposits remaining in the several banks as herein specified, to wit:

Atlantic Bank, Brooklyn.

Dividends,	$24 50
Deposits,	932 33

Long Island Bank, Brooklyn.

Deposits,	162 08

American Exchange Bank, N. Y.

Deposits,	6,933 70
Dividends,	1,315 00

Bank of Commerce, N. Y.

Deposits,	4,443	31
Dividends,	191	40

Bank of America, N. Y.

Deposits,	1,637	48
Dividends,	220	40

Bank of New-York, N. Y.

Deposits,	10,092	91
Dividends,	885	00

Butchers' and Drovers' Bank, N. Y.

Deposit,	667	91

Chemical Bank, N. Y.

Deposits,	1,167	22

City Bank, N. Y.

Deposits,	1,574	51
Dividends,	407	06

Fulton Bank, N. Y.

Deposits,	1,125	44
Dividends,	30	00

Leather Manufacturers' Bank, N. Y.

Deposits,	295	98
Dividends,	113	75

Manhattan Company's Bank, N. Y.

Deposits,	1,361	78
Dividends,	2,391	82

Mechanics' Bank, N. Y.

Deposits,	1,181	37
Dividends,	1,135	73

Merchants' and Traders' Bank, N. Y.

Deposits	1,623	45
Dividends,	30	00

Merchants' Bank, N. Y.

Deposits,	3,292	36
Dividends,	678	75

National Bank, N. Y.

Deposits	972	69
Dividends,	276	00

Phœnix Bank, N. Y.

Deposits,	793	90

Seventh Ward Bank, N. Y.

Deposits and dividends,	338	13

Tradesmen's Bank, N. Y.

Deposits,	1,155	28
Dividends,	764	20

Union Bank, N. Y.

Deposits,	4,431	41
Dividends,	1,975	09

Highland Bank, Newburgh.

Deposits,	6	50

Powell Bank, Newburgh.

Deposits,	25	00

Bank of Newburgh, Newburgh.

Deposits,	90	13

Merchants' Bank, Poughkeepsie.

Deposits,	611	37

Bank of Poughkeepsie, Poughkeepsie.

Deposits,	65	00

Farmers' and Manufacturers' Bank, Poughkeepsie.

Deposits,	19	32

Ulster County Bank, Kingston.

Deposits,	177	22

Kingston Bank, Kingston.

Deposits,	656	89

Hudson River Bank, Hudson.

Deposits,	163	73

Farmers' Bank, Hudson.

Deposits,	819	24

Farmers' Bank, Catskill.

Deposits, ... 104 65

Catskill Bank, Catskill..

Deposits, ... 209 29

Mechanics' and Farmers' Bank, Albany.

Deposits, ... 1,355 33

Albany City Bank, Albany.

Deposits, ... 207 43

Bank of Albany, Albany.

Deposits, ... 97 34

New-York State Bank, Albany.

Deposits, ... 447 10

Commercial Bank, Albany.

Deposits 2,593 92

The Commercial Bank of Troy requires a special notice. It is organized as a bank of issue and deposit; but has connected with it a savings department, in which deposits are received in trust in the same manner as if it was a regularly chartered and organized savings bank. Books are issued to the depositors in the usual form of other savings institutions in which it it is conspicuously stated that, "for the safety of the depositors in this bank are pledged its capital and the personal liability of its president, directors and stockholders agreeably to the 7th section of the 8th article of the Constitution of the State of New-York, a degree of security far greater than that given by any mere savings bank."

The money received from depositors is used by the bank in the same manner and for the same purpose as its other funds; and the security of the depositors is as above mentioned.

There remained in this bank on the 11th day of March last, unclaimed deposits to the amount of	$74,520 92
Dividends to the amount of,	4 00
	$74,524 92

This amount, though incredible to your committee as remaining unclaimed was so rendered by the officers of said bank.

The committee do not feel at liberty to recommend any particular course of legislation in regard to banks of issue and deposit usurping the functions of legitimate savings institutions; but they believe that it would be better and far safer for the class of persons usually most interested in these savings deposits if they would make their deposits in some regularly chartered savings bank, by the terms of whose charter its funds and deposits are required to be invested in United States stocks, andstocks of the State of New-York and in bonds and mortgages upon real estate in the State of New-York, worth double the amount loaned thereon, than to trust to the personal liability of the president, directors or stockholders of any bank of issue or deposit. Experience has shown, in the case of several of the savings banks in New-York city, that these deposits in the course of twenty or thirty years swell to a very large amount, often to millions of dollars, with large daily transactions with a class of persons whose occupations and pursuits prevent them from being acquainted with the personal responsibility of the directors and stockholders (even if they know who they are) of the bank with which such deposits are made. As a matter of policy on the part of the State to afford the greatest protection to this class of depositors, it would seem that some notice ought to be taken of the practice of the several banks of issue and deposit, holding themselves out to the community as savings bank, when in reality they are banks of circulation and discount.

The committee do not subjoin any tables giving names of depositors and particular amounts of dividends and deposits given as above in the aggregate, but they have filed with the clerk of the Assembly a package of papers from which at any time such particulars can be gathered and published at the pleasure of the Legislature.

In conclusion the Committee would state that various suggestions occurred to them in regard to the disposition of these unclaimed dividends and deposits. They do *not belong* to the bank in which they were made, but are only held by it *in trust* for the benefit of the owner. The State is as safe a depository as the bank. If the owner never calls for his money it would appear perfectly equitable and just that it should be taken by the State and devoted to some purpose of philanthropy or education in which the whole people can and will participate rather than to allow it to remain in any bank for the benefit of a particular class of persons.

All of which is respectfully submitted.

ABRAM WAKEMAN,
GEORGE UNDERWOOD.

Albany, April 2, 1852.

REPORT.

Of George A. S. Crooker, one of the Agents appointed by the Comptroller to examine savings banks and banks of issue, under a concurrent resolution of the Legislature of 1850.

To the Hon. the Legislature of the State of New-York:

The undersigned one of the agents appointed by the Comptroller under a resolution of the last Legislature of which the following is a copy.

"In Assembly,
April 12th, 1851.

Resolved, (if the Senate concur,) that the Comptroller be and he is hereby required to appoint an agent, or agents, not exceeding three, to enquire and ascertain the amount of unclaimed dividends and deposits made prior to the first day of January 1849, in the Savings banks of this State, and of banks of issue and deposit, and that said agent or agents, shall have power to examine under oath, to be administered by said agent or agents, or either of them, any of the officers, directors, or trustees of such bank, or other persons cognisant of any knowledge relating to such dividends and deposits, and shall also have power to examine fully into the books and affairs of such bank so far as such agent or agents, may deem it necessary to attain the object of this resolution: such agent or agents, shall also enquire into and ascertain the securities and value thereof held by any bank of savings for the payment of the deposits held by it in trust as well as the true amount of such deposit. The result of any such inestigation and examination shall be reported to the next Legislature within ten days after the session commences.

By order of the Assembly,

R. U. SHERMAN, *Clerk*.

Ordered, that the Senate concur in this resolution.

WILLIAM H. BOGART, *Clerk*.

HAS THE HONOR TO REPORT:

That at the time of conferring this appointment the Comptroller indicated his wishes that the undersigned should confine his investigations to the institutions situate in that portion of the State "west of the Hudson river counties and north of the county of Rensselaer," comprising a district of forty-four counties of the interior of the State, and that his colleagues in this agency should take the remaining fourteen.

This appointment was received on the 24th April last, and in consideration of the great district of country assigned, I immediately entered upon the execution of the trust committed to me. In discharging the duties of this appointment, the undersigned has visited every county embraced in his district and made a personal examination in all cases where from any circumstances that examination seemed to be necessary under the resolution of the Legislature. The district of country assigned, contains over one hundred banking associations and individual bankers, organized under the general banking law, thirty four incorporated banks and eleven savings banks.

In making the investigation required by the resolution, the undersigned felt himself embarrassed by the question whether he should report all balances that he might find upon the books of the banking institutions however small they might be. At all the institutions a greater or lesser number of small balances under a dollar and in most instances of a few cents only are found. He accordingly determined to reject all unclaimed balances under one dollar whether of dividends or deposits.

The condition of the several savings banks examined by the undersigned are as follows:

ROCHESTER SAVINGS BANK, *Dec.* 1 1851.

Assets.

Bonds and mortgages,	$499,247 02
Rochester city bonds,	6,000 00
County orders of Monroe county,	6,586 05
Cash in deposit in Rochester bank,	180,000 00
Cash on hand in bank,	4,746 00
Banking house and lot,	7,700 00
Furniture,	924 00
	$705,203 07

Liabilities.

Amount due depositors,	$669,135 26

There are no unclaimed dividends in this institution. The amount of unclaimed deposits prior to 1st January 1849, are as follows:

Date of fund deposit.	Names of depositors.	Amount 1st Jan'y 1849.
12 March, 1850,	Lydia Ranthom,	$9 71
2 April, "	John B. Harvey,	23 22
19 January, 1837,	Thomas Turner,	221 15
22 February, "	James Maine, 3d,	19 13
25 Sept., 1838,	Martha Nye,	64 87
1 May, "	Charles N. St Clair,	13 09
14 June, 1841,	Richard B. Anthony,	8 93
18 Sept. "	Maria Keil,	1,536 34
15 Oct., 1842,	Bridget Sheridan,	25 99
21 July, 1843,	Christopher Leavy,	135 01
28 Dec., "	Child'n of Sarah E. West,	9 34
26 June, 1844,	Marvin Whittemore,	80 44
21 Oct., "	Jeremiah Healy,	98 14
5 Feb., 1845,	Martha S. Crosby,	6 06
8 Mar., "	Roderick McDonald,	49 62
30 Oct., "	Charles D. French,	267 71
1 Jan'y, 1846,	James Liddy,	242 80
24 " "	Ruth A. Chapman,	11 51

Date of last deposit.	Names of depositors.	Amount of deposit.
12 Feb., 1846,	Winfred Egan,	22 96
17 Aug., "	Sebastean Roof,	33 65
24 Oct., "	Henry Jones,	6 51
21 " "	Byron A. Simpson,	3 12
16 Nov. "	William R. Murray,	8 37
8 Dec., "	Delia A. Case,	63 20
25 Feb., 1847,	James W. Chappel,	157 72
20 Mar., "	Laura Holdridge,	116 22
24 April, "	Eliza Knapp,	21 17
7 May, 1847,	Abner D. Jennings,	338 45
25 " "	George Fellows,	21 53
23 July, "	Franklin Hillhouse,	2 00
23 " "	Sally B. Swain,	144 12
31 " "	Arthur K. St. Clair,	12 87
21 Sept. "	William R. Mann,	5 30
8 Oct., "	Sarah M. Whale,	372 08
5 Nov., "	Abigial Wagar,	20 05
		$4,170 17

The Buffalo Savings Bank has neither unclaimed dividends or deposits under the resolution above set forth. This institution has invested in

Bonds and mortgages		$424,715 00
Bonds of the county of Erie,		10,594 38
Bonds of the city of Buffalo,		10,000 00
Bonds of the village of Black Rock,		500 00
Cash deposited in banks of the city of Buffalo secured by bonds and mortgages,		88,500 00
Cash in bank for daily use,		9,709 44
Invested in land on which a building for a banking house is now being erected,		7,117 50
Amount set apart for building purposes,	$16,784 72	
Deduct amount already expended,	2,713 40	
Balance,		14,207 64
Total assets,		$565,207 64

Amount of deposits,...........................	$534,033 26
Interest due on deposits, ...	3,031 68
Total liabilities,....................	$537,064 94

The Monroe county Savings Institution is also of so recent origin that it has neither unclaimed dividends or deposits.

The liabilities of this bank are the amount due depositors 12th December, 1851, $83,767.29, secured by

Bonds and mortgages,............................	42,299 31
Bonds payable on demand with mortgages and stocks as collateral security,..........................	13,200 00
Cash on deposit in bank in Rochester,.............	28,268 00

The Savings Bank of Utica, 30th November, 1851, had on deposit $174,887.33, secured by

Bonds and mortgages,...........................	$149,638 93
Bills receivable,................................	5,000 00
Cash in bank,..................................	19,570 37
Banking house, ...	7,164 00
	$181,373 30

The unclaimed deposits in the Savings Bank of Utica, are as follows:

Names of depositors.	When deposited.	Amount due.
James S. Bradley,.........	24 August, 1848,.....	$25 00
Wm Card for Mary E. Ward,	5 Sept., 1848,.....	6 46
Elizabeth Hinkley,........	20 June, 1841,.....	65 81
Anthony Monohan,........	25 February, 1842,.....	296 22
Dennis Murray,...........	26 Sept. 1839,.....	162 58
George S. Sheldon,........	23 June, 1848, ...	82 00
		$638 07

The condition of the Schenectady Savings bank is as follows up to January 1, 1851. The liabilities of this bank are,

Amount due depositors,	$179,831 65

Assets,

Bonds and mortgages,	$81,177 30
Ohio six per cent. bonds	15,000 00
United States six per cent. stock,	26,500 00
Albany and Schenectady railroad 7 per cent bonds worth par,	22,000 00
Interest due and unpaid on bonds and mortgages,	6,197 00
Interest due on stocks also unpaid,	1,323 91
Cash on hand,	32,068 27
	$184,266 49

Ohio 6 per cent. bonds are at a premium of nine per cent, and United States six per cent. stock is at a premium of sixteen per cent.

The unclaimed deposits in this institution prior to 1st January 1849, are as follows:

Date of last deposit.		Names of depositors.	Amount of deposit.
1 July,	1842,	Wm. Appleton for Maria N. Potter,	$100 00
28 Sept.	1846,	Ann Bently,	10 00
11 May,	1846,	Elizabeth Bunyan,	60 00
13 April,	1846,	David L. Barman,	5 00
28 Sept.,	1846,	James Bonner,	100 00
13 July,	1847,	Jane Becker,	50 00
9 June,	1845,	Sally for Mary Barheyt,	25 00
20 Nov.,	1844,	Willet Brown,	10 00
5 March,	1839,	David Briggs,	13 00
1 July,	1845,	James A. Brown,	4 15
21 Dec.,	1839,	Thomas Craig,	6 00
15 April,	1839,	Eve H. Clowes,	15 00
8 Feb.,	1847,	Jacob Clute, Jr.,	31 00
23 March,	1844,	Jane Cumming,	22 00
20 Sept.,	1847,	Joseph Crawford,	50 00
4 May,	1839,	Margaret S. Clute,	12 00
11 Oct.,	1835,	Geo. S. Dockstain,	46 00

Date of last deposit.	Names of depositors.	Amount of deposit
25 January, 1847,	Jediah French,	101 00
4 June, 1839,	Jane Hannay,	5 00
1 July, 1847,	Lesino Knowlton,	75 00
13 Dec., 1847,	Mary Ann Knapp,	15 00
1 January, 1841,	Peter Lamb,	26 00
20 April, 1844,	James Marston,	165 00
9 April, 1841,	William F. McCarty,	173 00
20 March, 1843,	John Marston,	35 00
10 Feb., 1844,	Ellen Masterton,	25 00
31 March, 1846,	Catarine Martin,	35 00
30 Dec., 1845,	James A. Miller,	65 00
5 Aug., 1845,	Dorothea Merselis,	35 00
27 July, 1835,	John Melroy,	1 10
8 Sept., 1846,	Julia Ann Niles,,	171 82
8 June, 1835,	Maria Neff,	200 00
29 June, 1846,	Francis Payne,	28 00
5 March, 1844,	Hannah Porter,	50 50
20 Sept., 1847,	James Perry,	0 0
24 Nov., 1845,	Mary Pinney,	60 00
26 Dec., 1836,	William Peters,	30 18
7 Aug., 1845,	Catharine Reynolds,	42 66
31 Aug., 1844,	John Rooney,	95 00
3 Nov., 1845,	Chrystie Riley,	300 44
1 Sept., 1846,	Nancy Stilwell,,	135 25
6 Dec., 1845,	Laura Sprague,	35 00
26 Oct., 1835,	James Spier,	8 00
29 June, 1846,	Thomas Swan,	110 00
11 Feb., 1846,	John Ting,	30 00
13 Aug., 1844,	Mary Van Ingen,	12 50
30 March, 1835,	Peter Smith Van Patten,	40 00
24 June, 1839,	Hetty Van Buskirk,	1 56
9 Sept., 1839,	Maria Wemple,	5 00
30 Nov., 1846,	Alida Walden,	20 00
1 April, 1845,	Margaret Walker,	45 00
1 Oct., 1847,	Amos Ward,	250 00

In order to ascertain the true amount due to each of the depositors in the above list, semi-annual interest should be added from the date of the deposit.

The Auburn Savings bank went into operation in May, 1849, and does not, therefore, come within the terms of the resolution, so far as relates to dividends or deposits. The condition of the bank on the first day of January last was as follows:

Amount due to depositors,	$17,890 72

Secured as follows,

Loans on bond and mortgage	$14,647 23
" on endorsed notes at 3 and 4 month,	2,974 05
Cash in bank,	269 44
	$17,890 72

In compliance with that portion of the resolution which requires the agents to report the "value" of the securities held by such savings banks, the undersigned would remark that a large part of these securities consist of bond and mortgages. That it would have been impracticable for the agent to have visited the premises mortgaged in order to ascertain the value in every instance, and such is believed not to have been the intention of the Legislature. It has been a uniform rule on the part of all the institutions above referred to before making a loan on this kind of security to require proof that the property to be mortgaged was worth at least double the amount of the sum loaned and exclusive of buildings. Such is the rule at the Auburn as well as all the other savings banks mentioned in this report. The notes in the Auburn Savings Bank are worth their respective amounts at par beyond all question.

The Ithaca Savings Bank is now or very soon will be wound up and closed and all liabilities redeemed. The whole amount of its debt due depositors was on the 1st January, 1852, but $131.29, to redeem which it had bills receivable to $138.00. The Syracuse Savings Institution is now having but a small amount as yet on deposit, and that amply secured. The Palmyra, Oswego and Binghamton Savings Banks were chartered some years since, but those institutions were never organized and their respective charters have probably been forfeited by non-user.

Here perhaps the duties of the agent would seem to terminate, so far as savings banks are concerned, under the resolution of the Legislature of 1851. But there remains one subject that he deems it his duty to call to the attention of the Legislature. In Utica, Syracuse, Oswego, Buffalo and other places, banks of issue formed under the General Banking law, and individual bankers are acting as savings banks, and receiving deposits and paying interest therefor, as savings institutions without any organization or charters as such. In most cases, such institutions put up in front of their offices a sign "Savings Bank." In many of the banks the amount deposited in what is called by these bankers, the "savings department," is large. In an individual bank in the village of Oswego, $30,000 and upwards is so deposited. In the Bank of Syracuse, the amount is reported to me as being $51,909.25. It is understood that such is the general practice of most of the banks of this region of country, and that the case of the bank of Syracuse is by no means singular.

If these banks and individual bankers are right in assuming the rights and powers of savings banks, without acts of incorporation, from henceforth the necessity of granting such charters will cease. But it seems to the undersigned that it is the bounden duty of the State Legislature to protect to the utmost extent of its ability and power the class of individuals who ordinarily deposit or design to deposit their money in a savings bank. It is most cheerfully admitted that the banks and bankers now holding these funds of the widow and the orphan are institutions and men of high character, and that all of them may at present be sound.

The same thing would have been said of any one of the banks that had broken in the last thirty years, six months before its failure. It is as wise to prepare for the storm when the sky is clear as it is to "prepare for war in time of peace." The undersigned therefore, felt it to be his duty to report the facts to the Legislature, in order that the proper corrective may be applied, if the practice is wrong, and that the savings of the poor might be protected by law if the Legislature have the constitutional power to do so.

In relation to that part of the resolution relating to dividends and deposits in banks of issue and deposit, the agent has the honor to report that in the whole district assigned him he finds but a single case of unclaimed dividends. As appears by the books of the Mohawk Bank there is due to its stockholders the sum of $403.42 of unclaimed dividends. But from an examination of the officers and books by the agent, he is convinced that it is more probable the mistake originated with a former clerk of the bank who probably neglected to make the proper entries when the dividends were paid, and that there was not in fact a single cent of dividends unpaid in the district assigned to to him.

In relation to unclaimed deposits prior to January 1, 1849, the agent has the following to report:

Oliver Lee & Co's. Bank, Buffalo.

Douglass, Stevenson & Co.,	$3 88
Hart & Holmes,	17 60
James Miller,	34 17
John Masten,	2 72
W. H. Rogers,	101 35
H. S. Durand,	1 34
	$161 06

Ballston Spa Bank.

5 Oct.,	1842,	John Wheeler	for Samuel S. Hoyt,	$15 00
12 June,	1847,	G. M. Davison	for Peter H. Biteley,	281 00
"	"	"	" Elisha Cook,	37 28
"	"	"	" George Clark,	54 54
"	"	"	" Thomas Clark,	54 54
"	"	"	" Eliza Clark,	54 54
"	"	"	" Peter Gansevoort,	3 40
"	"	"	" heirs of P. S. Livingston,	5 78
"	"	"	" John J. Hill,	67 50
				$573 58

Saratoga County Bank.

22 March, 1841,	Burt & Howland,	$3 50
25 Aug., 1845,	W. J. Whaling,	1 08
26 July, 1846,	Beardsley & Co.,	1 10
8 Jan., 1846,	E. Crandall,	120 00
10 April, 1847,	J. Strang,	2 57
8 Nov., 1848,	T. Preston,	10 70
28 Oct., 1848,	W. N. Chadwick,	3 57
		$142 52

Fort Plain Bank.

6 June, 1842,	J. E. L. Hamilton,	$3 66
26 July, 1843,	Edward Carey,	41 91
12 April, 1843,	W. Putnam,	1 75
28 Feb., 1846,	Charles Van Wyck,	2 50
		$49 82

Bank of Whitehall.

13 Sept., 1848,	L. G. & W. H. McDonald,	$3 57
25 Sept., 1848,	Wheedon & Wickham,	1 00
19 Sept., 1848,	P. M. Baker,	1 66
18 Nov., 1847,	Saratoga and Washington RR. Co. to credit of J. Pliny Adams..	350 00
		$356 23

Farmers' Bank of Amsterdam.

19 June, 1846,	Caleb Smith & Co.,	$100 00
8 Aug., 1848,	Abigail Jones,	30 00
31 Dec., 1848,	Wm. Chaffer,	18 91
“ “ “	Loucks & Gray,	2 14
“ “ “	George Clark,	13 79
		$164 84

Genesee County Bank.

22 Dec.,	1843,	Henry Braw,	$35 00
17 April,	1846,	P. M. Smith,	8 79
2 "	1847,	John H. Bailey,	200 00
			$243 79

Bank of Geneva.

12 July,	1832,	E. S. Taylor,	$3 32
9 Mar.,	1837,	J. Thompson,	3 32
5 Nov.,	1838,	S. G. Kelsey,	13 66
30 Dec.,	1843,	E. Tiffany,	30 00
26 July,	1844,	J. F. Phelps,	1 00
21 Oct.,	"	S. B. Mandeville,	1 68
1 Mar.	1845,	D. L. Lum,	15 00
11 Sept.,	"	Jonathan Warner,	2 40
5 Nov.,	"	James Adams,	100 00
4 Jan'y,	1847	J. Child and G. Dwight,	50 22
13 Feb.,	"	J. W. Goodrich,	7 24
8 Oct.,	"	H. D. Knight,	70 00
9 Oct.,	"	J. Knowles, Jr.,	3 00
4 Dec ,	"	A. C. Harpending,	1 75
			$302 59

Madison County Bank.

1 July,	1843,	A. Anguish,	$50 00

Broome County Bank.

	1847,	John M. Stephens,	$400 00

Rochester City Bank.

16 Sept.,	1840	N. Wright,	$83 75
25 Aug.,	1846,	O. Smith, Jr., per E. French,	2 39
			$86 14

Schenectady Bank.

14 April,	1845,	A. D. Briggs,	$5 36
22 Oct.,	"	Harry Chapman,	100 00
23 Jan.	"	Edwin Croswell,	57 52
15 July,	"	La Rue Craig,	10 63
9 June,	1843,	Abraham T. Davis,	1 07
7 Aug.,	1844,	Lewis Davenport,	1 61
18 Dec.,	1847,	L Jacobs,	14 85
21 May,	1844,	John A. Marselis,	15 00
3 Dec.,	1838,	Philip Reynolds, Jr.	1 36
22 May,	1845,	Henry Ramsey,	1 67
9 Oct.,	1843,	John Saunders,	8 60
29 Nov.,	1842,	Stephen Titus,	5 16
22 May,	1843,	Yates and Van Debogart,	1 00
			$217 83

Livingston County Bank.

8 Nov.,	1839,	Moses Pickett,	$13 00
22 June,	1840,	William Hull,	5 66
6 May,	1842,	Packard Bruce,	2 53
31 May,	1845,	William A. Mills,	1 98
14 Feb.,	1846,	Horace Hatch,	5 39
24 Aug.,	1846,	Sherman and Renwick,	3 27
28 Mar.,	1848,	R. H. Adams & Co.,	1 67
17 Nov.,	"	Lewis Skorke,	1 25
			$34 75

So far as the residue of the banks of issue in the district assigned to him by the Comptroller are concerned the agent can find in none of them any evidence of unclaimed dividends or deposits under the resolution of the Legislature. Indeed the practice prevails in many of the banks when they regard the accounts of individuals as closed, of immediately or at stated yearly intervals of time, of apprising depositors of any balances that may remain in bank to their credit. This practice prevents the accumulation of unclaimed deposits in such banks, and perhaps it would be wise if all institutions organized for banking purposes were required by law to give a similar notice as may be prescribed by the Legislature.

The undersigned also in consequence of the inability of one of his colleagues to attend attended in the city of New-York to assist in the investigation of institutions in that city for a short period. He, however, did not deem it his duty farther to report in relation thereto, but leaves that district to be reported upon by those who were especially assigned to examine the institutions located within it.

All of which is respectfully submitted.

GEORGE A. S. CROOKER.

Albany, March 9, 1852.

State of New-York.

No. 128.

IN ASSEMBLY, APRIL 7, 1852.

LIST OF MEMBERS OF ASSEMBLY

Of 1852, with their places of birth, age, occupation, &c., accompanied by tables of names, &c., of former members of Assembly from organization of State Government.

Clerk's Room, Assembly Chamber,
Albany, April 7, 1852.

R. U. Sherman, Esq.:

Sir—Herewith is submitted the annual table containing certain statistical information concerning the members and officers of the Assembly for the year 1852. This table has been prepared, according to your direction, by Mr. Horace N. Bill, the assistant librarian.

Accompanying this table there are some others, which have been prepared at the suggestion of several members of the present House, and which are also submitted to the Assembly.

The annual statistical table showing the birth place, occupation, age, weight, &c., of the several members of the Assembly, extends back to 1845, a period of eight years. It was supposed that by collecting the information contained in each table, and arranging it so as to show the results for the whole State during the period over which they extend, some interesting statistics concerning the representation in the most popular branch of the Legislature might be obtained, as well as some data of general interest to the State and to science. The tables submitted are numbered 1, 2, 3, 4, 5 and 6, and are as follows:

No. 1 contains very nearly the names of all the representatives in the Assembly of this State from the formation of the State government to the present time, arranged under the head of each county, showing the year and the number of the session in which each person was a member. It is believed that this is the only complete list of the members of the Assembly of the State of New-York in existence.

No. 2 shows the birth place, the country from which their parents came, the occupation and the average weight and age of the representatives of each county in the State for the past eight years; each county forming a separate table.

No. 3 shows the birth place of the representatives of the whole State arranged by counties, and under the heads of the States, or foreign countries in which they were born. Among the facts disclosed by this table is that which shows that out of the 1,024 members which have been in the Assembly for the past eight years, there was only one of them who was born on the continent of Europe and he was a native of Prussia.

No. 4 shows the several foreign countries from which the parents or ancestors of the representatives originally came, separating the British dominions from the rest of Europe. This table exhibits the fact that no descendant of the southern countries of Europe has been a representative in the popular branch of the Legislature during the period over which the table extends, while England, the home of the Normanic Anglo Saxon race, furnishes sixty per cent. of the whole number.

No. 5 shows the various occupations pursued by the representatives from each county for the last eight years. The agricultural interest prevails, there being about forty-four per cent. of the wole number who have been farmers; law and mercantile pursuits are the next highest and are nearly equal, the first being seventeen and the latter fifteen per cent. of the whole number.

No. 6 shows the comparative and average weight and age of the representation from each county. This table is mainly valuable as showing the ages between which the members have been selected generally by the various districts of the State, and also as exhibiting the weight of a large number of citizens selected indiscriminately without reference to their being either the largest or the smallest individuals.

The city of New-York furnishes not only the average of the youngest members, but also the extremes in age, the youngest representative for the eight years being the present member from the 15th district of New-York, Mr. St. John, who is only twenty-one, and the oldest being Mr. James Jarvis who was a member in 1845, and who was seventy at the time when he was a member. The extremes in weight are also remarkable, as ranging from 115 lbs. to 272 lbs., the lightest and smallest individual coming from the city of New-York, and the heaviest from the counties of Ulster and Montgomery. It is also shown that there are thirty-one counties whose heaviest members have been over 200 pounds, while there are but twenty counties who have had representatives weighing less than 130.

It is to be regretted that each table for the past eight years has not furnished the height, or stature, of the individuals, as it would have made the results intended to be arrived at much more complete.

I remain, sir, very truly yours,
ROBERT F. JOHNSTONE,
Librarian to the Assembly.

MEMBERS AND OFFICERS OF THE HOUSE OF ASSEMBLY

Of the State of New-York, for the year 1852; with their places of birth, condition in life, occupation, &c., &c.

Prepared by HORACE N. BILL, under the direction of R. U. SHERMAN, Clerk.

NAMES OF MEMBERS.	Representing what County.	Assembly District.	PLACE OF BIRTH.			Age	Condition in Life.	Profession or occupation	FROM WHAT COUNTRY THEIR ANCESTORS CAME.		Weight.
			State.	County.	City or Town.				Paternal.	Maternal.	
Babcock, Jeptha W.,	Niagara,	2	New-York,	Albany,	Rensselaerville,	46	Married	Farmer,	England	England	190
Bailey, Benajah P.,	Steuben,	2	Connecticut	New London,	Norwich,	52	do	Manufacturer	do	do	152
Benedict, John,	Lewis,		New-York,	Lewis,	Turin,	33	do	Merchant	do	do	165
Bennett, Joseph,	Erie,	4	Vermont,	Orange,	Chelsea,	48	do	Farmer	do	Germany	160
Berry, John,	Kings,	1	New-York,	New-York,	New-York,	23	Single	Lawyer	do	England	140
Bedell, Thomas, Jun.,	Greene,	2	do	Greene,	New Baltimore,	42	Married	Farmer	do	do	169
Billings, Elisha,	Washington,	1	do	Washington,	Jackson,	60	do	do	do	Wales.	170
Blackstone, Wyllis,	New-York,	6	Connecticut,	New Haven,	Braudford,	50	do	Mechanic	do	England	155
Blood, Isaiah,	Saratoga,	1	New-York,	Saratoga,	Ballston,	41	do	Scythe manufacturer	do	do	160
Bradley, Delos,	Cayuga,	3	do	Cayuga,	Semphronius,	46	do	Farmer	do	Holland	160
Brown, John,	New-York,	5	do	New-York,	New-York,	36	do	Printer			122
Bradford, George W.,	Cortland,		do	Otsego,	Otsego,	55	do	Physician	England	Ireland	135
Butler, Chauncey S.,	Oneida,	2	do	Oneida,	Paris	49	do	Farmer	Ireland	England	175
Bull, Hugh B.,	Orange,	1	do	Orange,	Crawford,	34	do	Lawyer	England	Ireland	180
Castle, John J	Oneida,	4	do	Oneida,	Lee,	48	do	Farmer	do	England	180
Chamberlin, Alvin,	Livingston,	1	do	Montgomery,	Amsterdam,	38	do	do	Wales	do	174
Chamberlin, Joseph P.,	Chenango,	2	do	Chenango,	Bainbridge,	56	do	Lumberman	England	do	185
Clark, William,	Montgomery,	2	do	Otsego,	Otsego,	40	do	Boatman	do	do	152
Cole, Stephen S.,	Cattaraugus,	1	Vermont,	Windham,	Marlboro',	48	do	Farmer	Ireland	do	190
Coburn, Merrill,	Jefferson,	2	New Hampshire,	Sullivan,	Cornish,	69	do	Lumberman	England	do	165
Corser, Caleb B.,	Monroe,	3	do	Merrimack,	Boscawen,	48	do	Farmer	Scotland	do	154
Copeland, George M.,	Orleans		Massachusetts,	Bristol,	Norton,	38	do	Merchant	England	do	130
Cortelyou, Lawrence N.,	Richmond,		New-York,	Richmond,	Westfield,	49	do	Farmer	France	do	164
Cuddeback, Abraham J.,	Orange,	3	do	Orange,	Deerpark,	44	do	do	do.	France	170
Cushing, Stephen B.,	Tompkins	2	Connecticut,	Fairfield,	Bridgeport,	38	do	Lawyer	Wales	do	131
Davis, John F.,	Montgomery,	1	New-York	Montgomery,	Mohawk,	41	do	Farmer	do	Germany	170
Demarest, John,	Rockland,		New-Jersey,	Bergen,	Harrington,	53	do	Physician	France	France	200
De Long, Charles,	Herkimer,	2	New-York,	Herkimer,	Warren,	44	do	Farmer	do	England	150
Doman James,	Schenectady,		do	Schenectady,	Princetown,	45	do	Merchant	Scotland	Scotland	135
Dutton, William.	Wayne,	1	Connecticut,	Litchfield,	Watertown,	28	do	Farmer	England	England	150
Ellsworth, Jeremiah,	Chautauque,	2	New York,	Otsego,	Decatur,	51	do	Physician	do	do	190
Elwood, Hezekiah,	Delaware,	1	Connecticut,	Fairfield,	Saugatuck,	65	do	Merchant			175
Emans, John S.,	Dutchess,	1	New-York,	Dutchess,	Fishkill	27	do	Farmer	England	France	165

Fish, Levi,	Genesee,	2	Massachusetts,	Franklin,	Shelburne,	61	Widow'er	Farmer & Manufacturer	England,	England	170
Ford, William L.,	Broome,	...	New-York,	Herkimer,	Newport,	31	do	Merchant	do	do	190
Freer, Jacob S.,	Ulster,	1	do	Ulster,	Middletown,	28	Married	Physician,	France	do	180
Gallup, Wesley R.,	Columbia,	1	do	Otsego,	Westford,	30	Single	Lawyer	England,	do	175
Gale, Moses D.,	New-York,	...	do	New-York,	New-York,	38	Married	Soap boiler	do	Scotland,	156
Gibson, James T.,	Oswego,	2	England,	......	......	33	do	Merchant	do	England,	195
Gilbert, William A.,	Jefferson,	1	Connecticut,	Tolland,	Hebron,	36	do	Farmer	do	do	175
Gray, Norman H.,	Greene,	1	Vermont,	Bennington,	Arlington,	30	do	do	Scotland	Scotland,	158
Heartt, Jonas C.,	Rensselaer,	1	New-York,	Rensselaer,	Troy,	53	do	Merchant	England,	England,	124
Harper, Robert,	Albany,	4	Ireland,	Antrim,	Mazarene,	40	do	Farmer and gardener,	Ireland,	Ireland,	195
Hartstorn, John R.,	Allegany,	2	New-York,	Madison,	Lebanon,	38	do	Physician,	England,	England,	140
Hayden, William,	Cayuga,	1	Massachusetts,	Hampshire,	Conway,	54	do	Manufacturer	Wales,	do	150
Hiner, Alfred N.,	Fulton & Ham'tn.	...	New-York,	Dutchess,	Redhook,	31	Single.	Merchant,	Germany,	Germany,	143
Hatfield, Abraham,	Westchester,	2	do	Westchester,	White Plains,	50	Married	Farmer,	England,	Wales	270
Hatch, Israel T.,	Erie,	1	do	Montgomery,	Johnstown,	42	do	Lawyer	do	England,	190
Hart, Edwin C.,	Oswego,	1	do	Oneida,	Marshall,	51	do	Merchant,	do	do	165
Herrick, William H.,	Rensselaer,	3	do	Rensselaer,	Greenbush,	30	do	Distiller	do	do	178
Hedges, Henry P.,	Suffolk,	1	do	Suffolk,	East Hampton,	34	do	Lawyer	do	do	130
Hoyt, Charles S.,	Yates,	...	Connecticut,	Fairfield,	Ridgefield,	29	Single.	Physician,	do	do	158
Holt, Jacob H.,	Canton,	...	New-York,	Clinton,	Plattsburgh,	45	Married	Farmer,	do	Holland	150
Hoover, John,	Herkimer,	1	do	Herkimer,	Manheim,	55	do	do	Germany	Germany.	142
Hawes, Nathan A.,	Putnam,	...	do	Putnam,	South East,	55	do	do	England,	England,	150
Humphrey, Wolcott J.,	Wyoming,	...	Connecticut,	Hartford,	Canton,	34	do	Merchant,	do	do	153
Hurlbut, Alvah,	Tompkins,	1	New-York,	Broome,	Barker,	52	do	Farmer,	do	do	150
Hutchins, Waldo,	Kings,	2	Connecticut,	Windham,	Brooklyn,	29	Single.	Lawyer	do	do	156
Johnson, Samuel E.,	do	3	New-York,	Queens,	Newtown,	36	Married	do	do	Holland	150
Keyes, Harvey,	Otsego,	3	do	Montgomery,	Canajoharie,	47	do	Farmer,	do	do	165
Keese, John M.,	Dutchess,	2	do	New York,	New-York,	37	do	do	do	England,	132
King, Erastus,	Otsego,	2	Connecticut,	Windham,	Killingsley,	45	do	Physician,	do	do	200
Lawrence, Darius W.,	Franklin,	...	New-York,	Franklin,	Moira,	29	do	Merchant,	do	do	140
Lake, Orrin, D.,	Livingston,	2	do	Delaware,	Kortright,	46	do	Farmer,	do	do	156
Leary, Andrew,	New-York,	14	Ireland,	Waterford,	Waterford,	29	Single.	Grocer	Ireland,	Ireland,	155
Luckey, Freeborn G.,	do	7	New-York,	Rensselaer,	Troy,	32	Married	Lawyer,	do	Holland	140
Lyon, George W.,	Westchester,	1	do	New-York,	New-York,	22	Single	Civil engineer	Wales,	England,	145
Millner, Joel P.,	Monroe,	2	do	Cortland,	Homer,	38	Married	Mechanic,	England,	Holland	170
Martin, Augustus,	Dutchess,	3	do	Dutchess,	Redhook,	43	do	Merchant	Germany	Ireland,	156
Merritt, John,	Onondaga	4	England,	Sussex,	Chichester,	50	do	Miller	England,	England,	145
Miner, William,	New-York,	1	do	Lancashire,	Manchester,	29	Single.	Butcher	do	do	178
Monroe, James,	do	10	Virginia,	Essex,	......	50	Married	Farmer	Scotland,	Wales	145
Mahoney, Patrick,	do	2	Ireland,	Clare,	Six Mile Bridge,	34	do	Hotel keeper	Ireland,	Ireland,	165
Miles, Lewis,	Delaware,	2	New-York,	Delaware,	Kortright,	51	do	Farmer,	Scotland,	England,	190
Moss, Abiah H.,	Niagara,	1	Canada East,	Stafford,	Broome,	46	do	Lawyer	England,	do	160
Nelson, Lyman,	Onondaga,	1	New-York,	Washington,	Hartford,	41	do	Merchant,	do	do	160
Ormsby, Zephier B.,	Suffolk,	2	do	Suffolk,	Huntington,	58	do	Gentleman,	do	Germany	120
O'Keefe, David, Jun.,	New-York,	11	do	New-York,	New-York,	24	Single.	Lawyer	Ireland,	Ireland	130
Osterhout, James,	Schoharie,	2	do	Schoharie,	Carlyle,	45	Married	Farmer,	Holland	Holland	170
Palmer, [illegible] H.,	Saratoga,	2	do	Greene,	Durham,	39	do	do	England,	England,	115

LIST OF MEMBERS—(CONTINUED.)

NAMES OF MEMBERS.	Representing what County.	Assembly District.	PLACE OF BIRTH.			Age	Condition in Life.	Profession or occupation	FROM WHAT COUNTRY THEIR ANCESTORS CAME.		Weight.
			State	County.	City or Town.				Paternal.	Maternal.	
Pettit, William R.,	Ontario	1	New-York	Saratoga	Greenfield	51	Married	Farmer	France	France	140
Perry, Nathaniel M.,	Steuben	3	do	Steuben	Troupsburgh	34	do	Physician	England	England	150
Pierson, William,	Tioga	....	do	Orange	Hamptonburgh	35	do	Merchant	do	France	170
Richards, George,	Warren	..	do	Warren	Caldwell	30	do	Lawyer	Wales	Ireland	148
Richmond, Albert E.,	Rensselaer	2	do	Rensselaer	Pittstown	32	Single.	Farmer	England	England	130
Riley, Aaron	Erie	3	Connecticut	Litchfield	Litchfield	45	Married	do	do	do	140
Rollins, Aaron B.,	New-York	9	New-York	Delaware	Stamford	32	do	Druggist	France	Holland	125
Rose, Joseph jun.,	do	3	do	New-York	New York	43	do	Mechanic	England	do	140
Rose, Parker W.,	St Lawrence	3	do	St Lawrence	Stockholm	39	do	Farmer	do	England	156
Rouse, William,	Jefferson	3	Connecticut	New London	Stamford	58	do	do	do	do	145
Rowe, Albert,	Genesee	1	New Hampshire	Coos	Enfield	34	do	Mechanic	Scotland	Scotland	156
Rowe, George B.,	Madison	1	New-York	Rensselaer	Schodack	47	do	Farmer	Germany	England	180
Sayles, George M.,	Albany	2	do	Washington	White Creek	42	do	Merchant	Wales	do	225
Sandford, Henry,	Oneida	3	Vermont	Bennington	Sandgate	42	do	Tanner	England	do	155
Sheldon, Alexander,	Cattaraugus	2	New-York	Ontario	Victor	28	do	Lawyer	do	Ireland	152
Shoecraft, John,	Monroe	1	do	Washington	Cambridge	59	do	Farmer	Holland	Scotland	155
Simmons, Elnathan U.,	Ontario	2	do	Ontario	Bristol	39	do	Physician	Wales	England	165
Smith, Austin,	Chautauque	1	do	Tompkins	Lansing	47	do	Lawyer	England	do	186
Smith, Benjamin,	St. Lawrence	2	do	Oneida	Rome	49	do	Surveyor	Wales	do	155
Smith, Sylvanus S.,	Queens	...	do	Queens	North Hempstead	40	do	Farmer	England	do	168
Snow, Ephraim L.,	New-York	16	Massachusetts	Suffolk	Boston	46	do	Gentleman	do	do	225
Sornberger, Seymour,	Schoharie	1	New-York	Columbia	Hillsdale	46	do	Mechanic	Germany	Holland	180
St John, Thomas P.,	New-York	15	Connecticut	Fairfield	Ridgefield	21	Single.	Lawyer	England	Scotland	154
Stevens George,	Onondaga	3	New-York	Onondaga	Onondaga	43	Married	Salt manufacturer	do	England	150
Stevens, James B.,	Orange	2	do	Orange	Chester	33	do	Farmer	do	Ireland	185
Steele, Robert R.,	Seneca	....	New Jersey	Somerset	Bridgewater,	45	do	Merchant	Ireland	England	156
Stilwell, Smith,	St. Lawrence	1	New-York	Saratoga	Newtown	67	do	Farmer	England	Holland	175
Strong, Elisha P.,	Sullivan	....	do	Greene	Ashland	33	do	Tanner	Scotland	France	150
Swift, Hugh,	Albany	1	Ireland	Tyrone	Drummore	52	do	Merchant	Ireland	Ireland	187
Taylor, William,	New-York	13	New-York	New-York	New-York	40	do	Teacher	Scotland	Scotland	130
Tallman, William E.,	Onondaga	2	do	Onondaga	Tulley	37	do	Farmer	Germany	England	153
Underwood, George,	Cayuga	2	do	Otsego	Cooperstown	36	do	Lawyer	England	do	150
Van Etten, James B.,	Chemung	...	do	Chemung	Cayuta	36	do	Lumberman	Holland	Holland	175
Van Santvoord, George,	Columbia	2	New Jersey	Essex	Bellville	32	do	Lawyer	do	do	140
Van Valkenburgh, Robert B.	Steuben	1	New-York	Steuben	Prattsburgh	30	do	do	do	England	175
Van Vechten, Teunis, jun.,	Albany	3	do	Albany	Albany	33	do	Farmer	do	Holland	190
Walsh, Michael,	New-York	12	do	New-York	New-York	31	do	Lithographer	Ireland	Ireland	135

Ward, Theodore A.,	New-York	4	New-York	New-York	New-York	30	Single	Agent	England	Holland	148
Welden, Abraham,	Essex		do	Clinton	Peru	52	do	Farmer and merchant	do	England	145
Westbrook, Jacob, jun.,	Ulster	2	do	Ulster	Marbletown	38	Married	Lawyer	do	France	150
Webb, Henry L.,	Madison	2	Connecticut	Fairfield	Norwalk,	32	do	Forwarder	England	do	162
Wheeler, John,	Allegany	1	Vermont	Windham	Newfane	50	do	Farmer	do	Scotland	145
White, Thompson,	Chenango	1	New-York	Otsego	Edmeston	40	do	Mechanic	do	England	150
Williams, George D.,	Oneida	1	do	Oneida	Whitestown	43	do	Farmer and cattle dealer	Wales	Ireland	175
Wilson, David,	Washington	2	do	Washington	Hebron	30	do	Lawyer	Scotland	do	140
Wright, Hanson,	Otsego	1	do	Otsego	Westford	37	do	Merchant	England	England	135
Yeomans, Theron G.,	Wayne	2	do	Greene	Cairo	37	do	Nurseryman and farmer	do	do	150
Youngs, Jasper B.,	Erie	2	do	Erie	Lancaster	40	do	Farmer	do	do	175
Clerk.											
Richard U. Sherman,	Oneida		do	Oneida	Vernon	32	do	Editor	do	England & Holland	190
Deputy Clerks.											
Ornon Archer,	Wayne		do	Washington	Granville	37	do	Lawyer	do	England	130
James McQuade,	Oneida		do	Oneida	Utica	22	Single		Ireland	Ireland	165
Daniel N. Huntington,	Franklin		Vermont	Windsor	Rochester	37	Married	Merchant	England	England	145
Abraham Van Vechten,	Albany		New-York	Albany	Albany	30	do	Lawyer	Holland	Holland	150
Librarians.											
Robert F Johnstone,	Albany		Ireland	Down	Bangor	34	do	Printer	Ireland	Ireland	165
Horace N. Bill,	Oneida		New-York	Oneida	Remsen	37	do	do	England	do	150
Sergeant-at-Arms.											
Joseph W. Caldwell,	Montgomery		do	Schoharie	Middleburgh	35	Wido'er	Merchant	do	Holland	118
William Durrin,	Westchester		do	Westchester	Cortland	33	Married	Iron founder	Scotland	Wales	245
Door Keepers.											
Nathan Chamberlin,	Jefferson		do	Jefferson	Ellisburgh	39	do	Farmer	England	England	175
Archibald Smith,	Washington		Vermont	Windsor	Cavendish	72	do	Mariner	Scotland	do	151
Asa Baldwin,	Wyoming		New-York	Wyoming	Sheldon	23	Single	Farmer	England	do	144
Patrick Barrett,	Albany		Ireland	Cork	Cork	27	Married	Brush Maker	Ireland	Ireland	144
Elisha T Burdick,	Rensselaer		New-York	Rensselaer	Grafton	28	do	Farmer			
Keeper of Assembly Chamber.											
Thomas E. Osborn,	Madison		do	Albany	Albany	53	do	Hair dresser	England	Holland	150
Post Master.											
John Parks,	Orleans		do	Montgomery	Glen	33	Single	Mechanic	Scotland	Scotland	173
Janitor.											
Nathaniel Goodwin	Cortland		Massachusetts	Plymouth	Plymouth	48	Married	Mariner	France	England	154

RECAPITULATION.

List of the different occupations and professions of members.

Farmers,	44
Manufacturers,	2
Merchants,	17
Lawyers,	21
Mechanics,	6
Scythe manufacturer,	1
Printer,	1
Physicians,	9
Lumbermen,	3
Boatman,	1
Farmer and manufacturer,	1
Soap boiler,	1
Farmer and gardener,	1
Distiller,	1
Grocer,	1
Civil engineer,	1
Miller,	1
Butcher,	1
Hotel keeper,	1
Gentlemen,	2
Druggist,	1
Tanners,	2
Surveyor,	1
Salt manufacturer,	1
Teacher,	1
Lithographer,	1
Agent,	1
Farmer and merchant,	1
Forwarder,	1
Farmer and cattle dealer,	1
Nurseryman and farmer,	1

List of Members' ages as classed.

Between 20 and 30,	14
" 30 and 40,	45
" 40 and 50,	41
" 50 and 60,	24
" 60 and 70,	4

List showing the States in which Members were born.

New-York,	90
Connecticut,	14
Vermont,	5
New-Hampshire,	3
Massachusetts,	4
New Jersey,	3
Virginia,	1
England,	3
Ireland,	4
Canada East,	1

Condition in life.

Married,	113
Single,,	13
Widowers,	2

I.—LIST

Of the Representatives in the Assembly of the State of New-York, from 1777, to 1852, arranged under the counties which each represented, and in the order of the sessions of the Legislature to which each was elected.

ALBANY COUNTY.

1777—1*st Session.*

Jacob Cuyler,
John Taylor,
Robert Van Ranselaer,
Walter Livingston,
William B. Whitney,
Peter Vroman,
John Cuyler,
James Gordon,
Stephen J. Schuyler,
William Van Ranselaer.

1778—2*d Session.*

Killian Van Rensselaer,
Robert Van Rensselaer,
Stephen J. Schuyler,
Jacobus Teller,
Peter Vroman,
Walter Livingston,
John Taylor,
William B. Whitney,
Leonard Gansevoort.

1779—3*d Session.*

William B. Whitney,
Cornelius Humphrey,
Henry Oothoudt,
Hugh Mitchell,
James Gordon,
John Bay,
Flores Bancker,
Phineas Whiteside,
Henry Quackenboss,
Isaac Vroman.

1780--81.—4*th Session,*

[The journal of the first meeting of the session is not extant; and the names of the Representatives are not to be found either in the State Library or in the office of the Secretary of State.]

1781-82—5*th Session.*

Dirck Swart,
Mathew Adgate,
Isaac Vrooman,
George Palmer,
Isaac Thomson,
Jacob Ford,
Philip Frisbie,
Samuel TenBroeck,
John Lansing, Jun.,
Edmund Welles.

1782-83—6*th Session.*

John Lansing, Jun.,
Dirck Swart,
Samuel TenBroeck,
Christopher Yates,
Mathew Adgate,
Jacob Ford,
John Ja. Beekman,
John Younglove,
Peter Van Ness,
John H. Beekman.

1784—7*th Session.*

Peter Van Ness,
James Gordon,
Christopher Yates,
Mathew Adgate,
Dirck Swart,
Abraham Becker,
Peter Schuyler,
John Lansing, Jun.,
Jacob Ford,
Abraham Cuyler.

1784-5—8*th Session.*

Christopher Yates,
Dirck Swart,
Jacob Ford,
Mathew Adgate,
Peter W. Yates,
John Younglove,
Mathew Visscher,
Israel Thompson,
Walter Livingston,
Abraham Becker.

1786—9*th Session.*

Peter Vroman,
John Lansing, Jun.,
John Taylor,
Henry Glen,
Jacobus Schoonhoven,
Leonard Bronk,
James Gordon,
John Livingston,
Abraham J. Van Alstyne,
Lawrence Hogeboom.

1787—10*th Session.*

John Lansing, Jun.,
Peter Vroman,
William Powers,
James Gordon,
Henry Glen,
Leonard Bronk,
John Livingston,
John Taylor,
Mathew Visscher,
Thomas Sickels.

1788—11*th Session.*

John Younglove,
Leonard Gansevoort,
Hezekiah Van Orden,
James Gorden,
Dirck Van Ingen,
Thomas Sickels,
John De Peyster Ten Eyck.

1788-9—12*th Session.*

John Younglove,
Cornelius Van Dyck,
John Thompson,
John Lansing, Jun.,
Jeremiah Van Rensselaer,
John Duncan,
Henry K. Van Rensselaer.

1889-90—13*th Session.*

Stephen Van Rensselaer,
Cornelius Van Vechten,
Leonard Bronck,
Richard Sill,
James Gordon,
Henry K. Van Rensselaer,
John Younglove.

1791—14*th Session.*

Richard Sill,
Sidney Bery,
Cornelius A. Van Sluyck,
Jacobus Van Schoonhoven,
Jonathan Brown,
John W. Schermerhorn,
Leonard Bronck.

1791—15*th Session.*

David McCarty,
Henry Ten Eyck,
William North,
Francis Nicoll,
Stephen Lush,
John Ten Broeck,
Jellis A. Fonda.

1792-3—16*th Session.*

Stephen Lusk,
Johannes Dietz,
Jellis A. Fonda,
Leonard Bronk,
John Tenbrook,
Cornelius A. Van Slyck,
Francis Nicoll.

1794—17*th Session.*

Jellis A. Fonda,
Stephen Platt,
William North,
Thomas Hun,
Johannes Deitz,
Jacob Hochstrasser,
Thedorus V. W. Graham.

1795—18*th Session.*

Jacob Hochstrasser,
Thomas Hun,
Stephen Platt,
Johannis Deitz,
Andries Van Patten,
Leonard Gansevoort, Jun.,
William North.

ALBANY AND SCHOHARIE COS.,

1796—19*th Session.*

William North,
Johannis Deitz,
Dirck Ten Broeck,
Francis Nicoll,
Gerret Abeel,
Jacob Hochstrasser,
Leonard Bronk.

1797—20*th Session.*

Dirck Ten Broeck,
John H. Wendell,
Philip P. Schuyler,
Jacob Hochstrasser,
John Prince,
Nathaniel Ogden,
Philip Conine Jun.,
James Bill,
James Holcomb,
James C. Duane.

1798—21*st Session.*

Dirck Ten Broeck,
Nathaniel Ogden,
Philip P. Schuyler,
Andrew N. Heermance,
John Prince,
Thomas E. Barker,
Joel Thompson,
Peter West,
Johan Jost Deitz,
John H. Wendell.

1798-99—22*nd Session.*

Dirck Ten Broeck,
Philip P. Schuyler,
Johan Jost Deitz,
Thomas E. Barker,
Prince Doty,
Jeremiah Lansingh,
Joseph Shurtleff,
James Bill,
Andrew N. Heermance.

1800—23*rd Session.*

Dirck Ten Broeck,
Prince Doty,
Johan Jost Deitz,
Joseph Shurtleff,
Jacob Winne,
John V. Henry,
Francis Nicoll,
James Bill,
Philip Conine, Jun.

1800-01—24*th Session.*

Dirck Ten Broeck,
Johan Jost Deitz,
Jacob Winne,
Joseph Shurtleff,
Jacob Ten Eyck,
Peter West,
Prince Doty,
John V. Henry.

1802—25*th Session.*

Dirck Ten Broeck,
John V. Henry,
Joseph Shurtleff,
John Jost Deitz,
Peter West,
Prince Doty,
Peter S. Schuyler,
Jacob Ten Eyck.

1803—26*th Session.*

Stephen Lush,
Johan Jost Deitz,
John Frisby,
Jacob Ten Eyck,
Peter S. Schuyler,
Maus Schermerhorn.

1804—27*th Session.*

James E. Mott,
Maus Schermerhorn,
Peter S. Schuyler,
Johan Jost Deitz,
Moses Smith,
John Beekman, Jun

1805—28*th Session.*

Stephen Lush,
Joseph Shurtleff,
Moses Smith,
Adam Deitz, Jun.,
Nicholas V. Mynderse,
David Burhans.

1806—29*th Session.*

Stephen Lush,
Abraham Van Vechten,
Joseph Shurtleff,
Adam Deitz, Jun.,
Asa Colvard,
David Burhans.

ALBANY COUNTY.

1807—30*th Session.*

Joseph Shurtleff,
Johan Jost Deitz,
Asa Colvard,
David Bogardus,
Jacob Veeder,
Daniel Hale.

1808—31*st Session.*

Abraham Van Vechten,
Stephen Van Rensselaer,
Jonathan Jenkins,
Johan Jost Deitz,
Jacob Veeder,
John Brown.

1808-9—32*d Session.*

Abraham Van Vechten,
Stephen Van Rensselaer,
John Brown,
John H. Burhans,
Jonathan Jenkins,
Johan Jost Deitz.

1810—33*d Session.*

Stephen Van Rensselaer,
Abraham Van Vechten,
John Colvin,
Abel French.

1811—34*th Session.*

Johan Jost Deitz,
Asa Colvard,
Abraham Van Vechten,
David Delong.

1812—35*th Session.*

Abraham Van Vechten,
Jesse Tyler,
Asa Colvard,
John G. Van Zandt.

1812-13—36*th Session.*

Abraham Van Vechten,
David Bogardus,
Elishama Janes,
John Gibbons.

1814—37*th Session.*

Harmanus Bleecker,
John L. Winne,
Moses Smith,
Johan Jost Deitz.

1814-15—38*th Session.*

Harmanus Bleecker,
John D. Winne.
Sylvester Ford,
Jesse Tyler.

1816—39*th Session.*

John J. Ostrander,
Michael Freligh,
John Schoolcraft,
Jesse Smith.

1816-17—40*th Session.*

Rufus Watson,
John J. Ostrander,
Gideon Tabor,
John H. Burhans.

1818—41*st Session.*

William A. Duer,
Gideon Tabor,
James Sackett,
Stephen Van Rensselaer.

1819—42*d Session.*

William A. Duer,
William D. Houghtailing,
Cornelius H. Waldron,
John Van Ness Yates.

1820—43*d Session.*

James McKown,
Peter S. Schuyler,
Asa Colvard,
Stephen Willes

1820-21—44*th Session.*

James McKown,
Stephen Willes,
Moses Smith,
Gerrit Hogan.

1822—45*th Session.*

James McKown,
William McKown,
Volkert D. Oothoudt,
John P. Shear.

1823—46*th Session.*

Jesse Buel,
Abraham Brooks,
Abraham Rosecrantz.

1824—47*th Session.*

Jesse Wood,
Archibald Stephens,
John Stilwell.

1825—48*th Session.*

Samuel S. Lush,
Stephen Willes,
George Batterman.

1826—49*th Session.*

Samuel S. Lush,
Malachi Whipple.
Andrew Ten Eyck.

1827—50*th Session.*

Isaac Hamilton,
John Haswell,
Henry Stone.

1828—51*st Session.*

William N. Sill,
Benjamin F. Butler,
David J. D. Verplanck.

1829—52d *Session.*

Chandler Starr, James D. Gardner.
Moses Stanton.

1830—53d *Session.*

Peter Gansevoort, Samuel S. Lush,
Erastus Williams.

1831—54th *Session.*

Peter Gansevoort, Wheeler Watson,
Peter W. Winne.

1832—55th *Session.*

William Seymour, Philip Lennebacker.
Abijah C. Disbrow.

1833—56th *Session.*

Edward Livingston, Israel Shear,
Jacob Settle.

1834—57th *Session.*

Barent P. Staats, Aaron Livingston,
Prentice Williams Jun.

1835—58th *Session.*

Edward Livingston, Henry G. Wheaton,
Tobias T. E. Waldron.

1836—59th *Session.*

William Seymour, John C. Schuyler
Daniel Dorman.

1837—60th *Session.*

Edward Livingston, Richard Kimmey,
Abraham Ver Planck.

1838—61st *Session.*

Daniel D. Barnard, Paul Settle,
Edmund Raynsford.

1839—62d *Session.*

John Davis, James S. Lowe,
Rufus Watson.

1840—63*d Session.*

Henry G. Wheaton,
Frederick Bassler, Jun.
Peter Flagler.

1841—64*th Session.*

Henry G. Wheaton,
Francis Lansing,
Aaron Houghtailing.

1842—65*th Session.*

John A. Dix,
Cornelius G. Palmer,
Jonas Shear.

1843—66*th Session.*

Willis Hall,
Aaron Van Schaack,
John I. Slingerland.

1844—67*th Session.*

Samuel Stevens,
Simon Veeder,
Levi Shaw.

1845—68*th Session.*

Ira Harris,
Clarkson F. Crosby,
Leonard Litchfield.

1846—69*th Session.*

Ira Harris,
Robert D. Watson,
Thomas L Shafer.

1847—70*th Session.*

Valentine Treadwell,
John J. Gallup,
Robert D. Watson,
John Fuller.

1848—71*st Session.*

1. Edward S. Willet,
2. Frederick Mathias,
3. Robert H. Pruyn,
4. Henry A. Brigham.

1849—72*d Session.*

1. Hiram Barber,
2. David Van Auken,
3. Robert H. Pruyn,
4. Joel A. Wing.

1850—73*d Session.*

1. Cornelius Vanderzee,
2. Joel B. Nott,
3. Robert H. Pruyn,
4. William S. Shepard

1851—74*th Session.*

1. Robert Babcock,	3. Hamilton Harris,
2. Adam I. Shultes,	4. Eli Perry.

1852—75*th Session.*

1. Hugh Swift,	3. Teunis Van Vechten, Jr.,
2. George M. Sayles,	4. Robert Harper.

ALLEGANY COUNTY.

1823—46*th Session.*

James McCall.

1824—47*th Session.*

Lazarus S. Rathbun.

1825—48*th Session.*

Lazarus S. Rathbun.

1826—49*th Session.*

George Williams.

1827—50*th Session.*

Asa Lee Davison.

1828—51*st Session.*

Azel Fitch.

1829—52*d Session.*

Azel Fitch.

1830—53*d Session.*

Daniel Ashley.

1831—54*th Session.*

Daniel Ashley.

1832—55*th Session.*

John B. Collins.

1833—56*th Session.*

John B. Collins.

1834—57*th Session.*

Lewis Wood.

1835—58*th Session.*

Alvin Burr.

1836—59*th Session.*

Calvin T. Chamberlain.

1837—60*th Session.*

Calvin T. Chamberlain, Azel Fitch.

1838—61*st Session.*

Seth H. Pratt, Samuel Russell.

1839—62*d Session.*

William Welsh, Seth H. Pratt.

1840—63*d Session.*

William Welsh, Lorenzo Dana.

1841—64*th Session.*

Lorenzo Dana, Horace Hunt.

1842—65*th Session.*

Lorenzo Dana, Horace Hunt.

1843—66*th Session.*

Samuel Russell, Robert Flint.

1844—67*th Session.*

Horatio R. Riddle, Nathaniel Coe.

1845—68*th Session.*

John G. Collins, Nathaniel Coe.

1846—69*th Session.*

John G. Collins, Nathaniel Coe.

1847—70*th Session.*

Grover Leavens, Samuel Russell.

1848—71*st Session.*

1. John Wheeler, 2. William Cobb.

1849—72*d Second.*

1. Orville Boardman,	2. Erastus H. Willard.

1850—73*d Session.*

1. Anthony T. Wood,	2. Joseph Corey.

1851—74*th Session.*

1. Emery E. Norton,	2. Anson Congdon.

1852—75*th Session.*

1. John Wheeler,	2. John R. Hartshorn.

BROOME COUNTY.

1808-9—32*d Session.*

Eleazar Dana.

1810—33*d Session.*

James Pumpelly.

1811—34*th Session.*

?

1812—35*th Session.*

Chancey Hyde.

1812-13—36*th Session.*

Chancey Hyde.

1814—37*th Session.*

John H. Avery.

1814-15—38*th Session.*

Asa Leonard.

1816—39*th Session.*

Mason Whiting.

1816-17—40*th Session.*

Joshua Whitney.

1818—41*st Session.*

John W. Harper.

1819—42*d* *Session.*

Chester Patterson.

1820—43*d* *Session.*

Chester Patterson.

1820-21—44*th* *Session.*

Chester Patterson.

1822—45*th* *Session.*

Chauncy Hyde.

1823—46*th* *Session.*

Jonathan Lewis.

1824—47*th* *Session.*

Thomas G. Waterman.

1825—48*th* *Session.*

Bryant Stoddard.

1826—49*th* *Session.*

Peter Robinson.

1827—50*th* *Session.*

Peter Robinson.

1828—51*st* *Session.*

Peter Robinson.

1829—52*d* *Session.*

Peter Robinson.

1830—53*d* *Session.*

Peter Robinson.

1831—54*th* *Session.*

Peter Robinson.

1832—55*th* *Session.*

Vincent Whitney.

1833—56*th* *Session.*

Chauncey J. Fox.

1834—57*th* *Session.*

David C. Case.

1835—58*th* *Session.*

Neri Blatchly.

1836—59*th* *Session.*

Judson Allen.

1837—60*th* *Session.*

Judson Allen.

1838—61*st* *Session.*

James Stoddard.

1839—62*d* *Session.*

John Stoughton.

1840—63*d* *Session.*

Cornelius Mersereau.

1841—64*th* *Session.*

Gideon M. Hotchkiss.

1842—65*th* *Session.*

Robert Harpur.

1843—66*th* *Session.*

Gilbert Dickinson.

1844—67*th* *Session.*

John B. Rogers.

1845—68*th* *Session.*

Cyrus Johnson.

1846—69*th* *Session.*

Salphronius H. French.

1847—70*th* *Session.*

Oliver C. Crocker.

1848—71*st Session.*

Jeremiah Hall.

1849—72*d Session.*

John O. Whittaker.

1850—73*d Session.*

Edward Y. Park.

1851—74*th Session.*

Roger W. Hinds.

1852—75*th Session.*

William L. Ford.

CATTARAUGUS COUNTY.

1823—46*th Session.*

Stephen Crosby.

1824—47*th Session.*

Phinehas Spencer.

1825—48*th Session.*

Daniel Hodges.

1826—49*th Session.*

James McGlashan.

1827—50*th Session.*

John A. Bryan.

1828—51*st Session.*

James McGlashan.

1829—52*d Session.*

Flavil Partridge.

1830—53*d Session.*

Stephen Crosby.

1831—54*th Session.*

Russell Hubbard.

1832—55*th Session.*

George A. S. Crooker.

1833—56*th Session.*

Chauncey J. Fox.

1834—57*th Session.*

Chauncey J. Fox.

1835—58*th Session.*

Albert G. Burke.

1836—59*th Session.*

David Day.

1837—60*th Session.*

Phineas Spencer, Tilly Gilbert.

1838—61*st Session.*

Timothy H. Porter, Nelson Green.

1839—62*d Session.*

George A. S. Crooker, Hollis Scott.

1840—63*d Session.*

George A. S. Crooker, Timothy H. Porter.

1841—64*th Session.*

Alonzo Hawley, Chester Howe.

1842—65*th Session.*

Samuel Barrows, Lewis T. Thorp.

1843—66*th Session.*

Elijah A. Rice, Alonzo Hawley.

1844—67*th Session.*

James Burt, Marcus H. Johnson.

1845—68*th Session.*

Seth Field, Roderick White.

1846—69*th Session.*

Gideon Searl, Elijah A. Rice.

1847—70*th Session.*

Rufus Crowley, Joseph E. Weeden.

1848—71*st Session.*

1. James G. Johnson, Marcus H. Johnson.

1849—72*d Session.*

1. Seth R. Crittenden, Horace C. Young.

1850—73*d Session.*

1. Frederick S. Martin, 2. Horace C. Young.

1851—74*th Session.*

1. Alonzo A. Gregory, 2. William J. Nelson.

1852—75*th Session.*

1. Stephen S. Cole, 2. Alexander Sheldon.

CAYUGA COUNTY.

1800—23*d Session.*

Silas Halsey.

1800-1801—24*th Session.*

Silas Halsey.

1802—25*th Session.*

Salmon Buel.

1803—26*th Session.*

Silas Halsey, Thomas Hewitt,
Salmon Buel.

1804—27*th Session.*

Silas Halsey, Thomas Hewitt,
Amos Rathbun.

1804 1805—28*th Session.*

Amos Rathbun, John Grover, jun.

1806—29*th Session.*

John Grover, jun. Amos Rathbun.

1807—30*th Session.*

Amos Rathbun, John Grover, jun.

1808—31*st Session.*

Richard Townley, Elijah Price.

1808-9—32*d Session.*

Henry Bloom, Ebenezer Hewitt,
Charles Kellogg.

1810—33*d Session.*

Charles Kellogg, Stephen Close,
Henry Bloom.

1811—34*th Session.*

Stephen Close, Ebenezer Hewitt,
Elisha Durkee.

1812—35*th Session.*

Thomas Ludlow, Stephen Close,
Humphrey Howland.

1812-13—36*th Session.*

Thomas Ludlow, William Satterlee,
William C. Bennet.

1814—37*th Session.*

Silas Bowker, William C. Bennet,
William Satterlee.

1814-15—38*th Session.*

Silas Bowker, John H. Beach,
Barnabas Smith.

1816—39*th Session.*

John H. Beach, John McFadden,
Barnabas Smith, John Brown, jun.

1816-17—40*th Session.*

John H. Beach, John Brown, jun.,
Rowland Day, John McFadden.

1818—41*st Session.*

William Clark, 2d., Thatcher I. Ferris,
Isaac Smith.

1819—42*d Session.*

Elijah Devoe, Henry Polhemus,
William Allen.

1820—43*d Session.*

John Haring, William Allen,
Samuel Dill.

1820-21—44*th Session.*

Henry Polhemus, Charles Kellogg,
John Haring.

1822—45*th Session.*

Charles Kellogg, E. C. Marsh,
Samuel Dill.

1823—46*th Session.*

Elijah Drake, Josiah Bevier,
John Jakway, John O'Hara.

1824—47*th Session.*

Silas Bowker, Augustus F. Ferris,
Josiah Bevier, Asahel Fitch.

1825—48*th Session.*

Roswell Enos, Elijah Devoe,
John W. Hurlburt, Ephraim C. Marsh.

1826—49*th Session.*

Eleazer Burnham,
Thatcher I. Ferris,
Campbell Waldo,
Aaron Dennis.

1827—50*th Session.*

Gardner Kortright,
Peter Yawger,
James Kenyon,
Andrews Preston.

1828—51*st Session.*

Gardner Kortright,
Henry R. Brinckerhoof,
Philo Sperry,
William H. Noble.

1829—52*d Session.*

Henry P. Brinkerhoff,
William H. Noble,
Ephraim Hammond,
Wing Taber.

1830—53*d Session.*

William H. Noble,
Ephraim Hammond,
Richard L. Smith,
Solomon Love.

1831—54*th Session.*

Peter Yawger,
Solomon Love,
George S. Tilford,
Elias Manchester.

1832—55*th Session.*

George H. Brinkerhoof,
John W. Sawyer,
John Beardsley,
George S. Tilford.

1833—56*th Session.*

John Beardsley,
George H. Brinkerhoof,
John W. Sawyer,
Simon Lathrop.

1834—57*th Session.*

Cornelius Cuykendall,
Andrew Groom,
Noyes Palmer,
Dennis Arnold.

1835—58*th Session.*

Cornelius Cuykendall,
Andrew Groom,
Noyes Palmer,
Andrews Preston.

1836—59*th Session.*

Charles E. Shepard,
Dennis Arnold,
Richard L. Smith,
William Wilber.

1837—60*th Session.*

Charles E. Shepard, Curtiss C. Cady,
William Wilbur.

1838—61*st Session.*

Isaac S. Miller, Nathan G. Morgan,
Henry R. Filley.

1839—62*d Session.*

Nathan G. Morgan, Henry R. Filley,
John McIntosh.

1840—63*d Session.*

John W. McFadden, Artemas Cady,
Andrews Preston.

1841—64*th Session.*

Darius Adams, John W. McFadden,
Osman Rhoades.

1842—65*th Session.*

Alvares Tupper, John L. Cuyler,
Vincent Kenyon.

1843—66*th Session.*

Vincent Kenyon, Darius Monroe,
Alfred Lyon.

1844—67*th Session.*

Ashel Avery, Robert Hume,
Benjamin F. Hall.

1845—68*th Session.*

William Titus, David Gould,
Leonard Searing.

1846—69*th Session.*

Samuel Bell, William J. Cornwell,
John T. Rathbun.

1847—70*th Session.*

John T. Rathbun, William J. Cornwell,
Samuel Bell.

1848—71*st Session.*

1. Ebenezer Curtis, 2. John I. Brinkerhoff,
3. Hector C. Tuthill.

1849—72*d Session.*

1. James D. Button, 2. John I. Brinckerhoff,
3. Hector C. Tuthill.

1850—73*d Session.*

1. Hiram Koon, 2. John Richardson,
3. Asahel Avery.

1851—74*th Session.*

1. Levi Colvin, 2. George Underwood,
3. Delos Bradley.

1852—75*th Session*

1. William Hayden, 2. George Underwood,
3. Delos Bradley.

CHAUTAUQUE COUNTY.

1823—46*th Session.*

James Mullett, Jr.

1824—47*th Session.*

James Mullett, Jr.

1825—48*th Session.*

Nathan Mixer.

1826—49*th Session.*

Elial T. Foote.

1827—50*th Session.*

Elial T. Foote, Samuel A. Brown.

1828—51*st Session.*

Nathan Mixer, Nathaniel Fenton.

1829—52*d Session.*

Abner Hazeltine, Nathan Mixer.

1830—53*d Session.*

Abner Hazeltine, Squire White.

1831—54*th Session.*

John Birdsall, Squire White.

1832—55*th Session.*

Squire White, Theron Bly.

1833—56*th Session.*

Alvin Plumb, Nathaniel Gray.

1834—57*th Session.*

Thomas A. Osborne, James Hall.

1835—58*th Session.*

Orrin McCluer, John Woodward, Jr.

1836—59*th Session.*

Richard P. Marvin, Thomas B. Campbell.

1837—60*th Session.*

Alvin Plumb, William Willcox,
Calvin Rumsey.

1838—61*st Session.*

Abner Lewis, Thomas J. Allen,
George A. French.

1839—62*d Session.*

Abner Lewis, Timothy Judson,
Waterman Ellsworth.

1840—63*d Session.*

George A. French, William Rice,
Odin Benedict.

1841—64*th Session.*

George A. French, Benjamin Douglass,
Robertson Whiteside.

1842—65*th Session.*

Emory F. Warren, Rossiter P. Johnson,
Austin Pierce.

1843—66*th Session.*

Emory F. Warren, Adolphus F. Morrison,
Odin Benedict.

1844—67*th Session.*

Marcius Simons, Elijah Waters,
Forbes Johnson.

1845—68*th Session.*

Samuel A. Brown, Henry C. Frisbee,
Jeremiah Mann.

1846—69*th Session.*

Elisha Ward, Valorus Lake,
Madison Burnell.

1847—70*th Session.*

Madison Burnell, Charles J. Orton.

1848—71*st Session.*

1. John H. Pray, 2. David H. Treadway.

1849—72*d Session.*

1. Silas Terry, 2. Ezekiel B. Gurnsey.

1850—73*d Session.*

1. John P. Hall, 2. Samuel Barrett.

1851—74*th Session.*

1. Austin Smith, 2. Daniel W. Douglass.

1852—75*th Session.*

1. Austin Smith, 2. Jeremiah Ellsworth.

CHEMUNG COUNTY.

1837—60*th Session.*
Jacob Westlake.

1838—61*st Session.*
Hiram White.

1839—62*d Session.*
Jonathan P. Couch.

1840—63*d Session.*
Guy Hulett.

1841—64*th Session.*
Jefferson B. Clarke.

1842—65*th Session.*
Samuel G. Hathaway, Jr.

1843—66*th Session.*
Samuel G. Hathaway, Jr.

1844—67*th Session.*
Sylvester Hazen.

1845—68*th Session.*
Peter McKey.

1846—69*th Session.*
Abraham Primmer.

1847—70*th Session.*
William Maxwell.

1848—71*st Session.*
George W. Buck.

1849—72*d Session.*
Alvan Nash.

1850—73*d Session.*
Philo Jones.

1851—74*th Session.*

Samuel Minier.

1852—75*th Session.*

James B. Van Etten.

CHENANGO COUNTY.

1798-99—22*d Session.*

Obadiah German,

Nathaniel King.

1800—23*d Session.*

Nathaniel King,

Peter B. Garnsey.

1800-1—24*th Session.*

Jonathan Forman,

James Glover.

1802—25*th Session.*

Joshua Mersereau jun.,

Nathaniel King.

1803—26*th Session.*

James Green,
Joel Thompson,
Stephen Hoxie,
Uri Tracy,

1804—27*th Session.*

James Moore,
Stephen Hoxie,
Obadiah German,
Joel Thompson.

1804-5—28*th Session.*

Luther Waterman,
Samuel Payne,
Obadiah German,
Peter Betts.

1806—29*th Session.*

Sylvanus Smally,
Samuel Payne,
Benjamin Jones,
Jonathan Morgan.

1807—30*th Session.*

Obadiah German,
Joseph Simonds,

1808—31*st Session.*

Obadiah German, Peter Betts.

1808-9—32*d Session.*

Obadiah German, Samuel Campbell.

1810—33*d Session.*

Nathaniel Locke, John Noyes,
Ebenezer Wakely.

1811—34*th Session.*

Peter Betts, Joseph Simonds,
Thompson Mead.

1812—35*th Session.*

Samuel Campbell, Dennison Randall,
Silas Holmes.

1812-13—36*th Session.*

Ebenezer Wakeley, Thornton Wasson,
Nathaniel Medbury.

1814—37*th Session.*

Hascall Ransford, James Houghtailing,
John Noyes.

1814-15—38*th Session.*

Robert Monell, John Guthrie,
Thompson Mead.

1816—39*th Session.*

Thomas Brown, William Munro,
Russel Waters.

1816-17—40*th Session.*

James Houghtaling, Ebenezer Wakely,
Samuel A. Smith.

1818—41*st Session.*

Perez Randall, Simon G. Throop,
Tilley Lynde.

1819—42*d Session.*

Obadiah German, Ebenezer Wakeley,
Thomas Humphrey.

1820—43*d Session.*

Thomas Humphrey, Samuel A. Smith,
Samuel Campbell.

1820-21—44*th Session.*

Edmund G. Per Lee, William Mason,
John Tracy,

1822—45*th Session.*

John Tracy, Edmund G. Per Lee,
William Mason.

1823—46*th Session.*

Silas Holmes, Stephen Stilwell,
Austin Hyde.

1824—47*th Session.*

John Latham, Daniel Root,
John F. Hubbard.

1825—48*th Session.*

Russel Case, Robert Monell,
Charles Medbury.

1826—49*th Session.*

John Tracy, Robert Monell,
John C. Clark.

1827—50*th Session.*

James Birdsall, Augustus C. Welch,
Josept Juliand.

1828—51*st Session.*

Robert Monell, Tilly Lynde,
Henry Mitchell.

1829—52*d Session.*

Amos A. Franklin, Russel Case,
Abel Chandler.

1830—53*d Session.*

Charles Squires, John Latham,
Jarvis K. Pike.

1831—54*th Session.*

Ira Wilcox, Jarvis K. Pike,
Joseph Juliand.

1832—55*th Session.*

Edmund G. Per Lee, Noah Ely,
Joseph Juliand.

1833—56*th Session.*

Austin Hyde, William M. Patterson,
Abel Chandler.

1834—57*th Session.*

Milo Hunt, Wells Wait,
Joseph P. Chamberlin.

1835—58*th Session.*

Hendrick Crain, Woodward Warren,
Henry Crary.

1836—59*th Session.*

William Knowlton, Squire Smith,
Nicholas B. Mead.

1837—60*th Session.*

Squire Smith, John F. Hill,
Isaac Stokes.

1838—61*st Session.*

Demas Hubbard, Jr., Justus Parce,
Henry Balcom.

1839—62*d Session.*

Demas Hubbard, jr., Samuel Drew,
Josiah G. Olney.

1840—63*d Session*.

Demas Hubbard, jr., Samuel Plumb,
Willliam Church.

1841—64*th Session*.

Calvin Cole, Eber Dimmick,
Benson H. Wheeler.

1842—65*th Session*.

Richard W. Juliand, Adam Storing,
Clark Burnham.

1843—66*th Session*.

Samuel Medbury, Edward Cornell,
Danforth Wales.

1844—67*th Session*.

Daniel Noyes, Rensselaer W. Clark,
Erastus Dickinson.

1845—68*th Session*.

Solomon S. Hall, Joel Burdick,
Charles B. Miller.

1846—69*th Session*.

Solomon Ensign, jr., Hiram E. Storrs,
William G. Sands.

1847—70*th Session*.

Ransom Balcom, David Mc Whorter.

1848—71*st Session*.

1. Levi H. Case, 2. Ezra P. Church.

1849—72*d Session*.

1. James Clark, 2. Alonzo Johnson.

1850—73*d Session*.

1. Isaac L. F. Cushman, 2. Rufus Chandler.

1851—74*th Session*.

1. Levi Harris, 2. Laman Ingersoll.

1852—75*th Session.*

1. Thompson White, 2. Joseph P. Chamberlin.

CLINTON COUNTY.

1797—20*th Session.*

Charles Platt.

1798—21*st Session.*

Daniel Ross.

1798-99—22*d Session.*

Asa Adgate.

1800—23*d Session.*

William Gilliland.

1800-1801—24*th Session.*

?

1802—25*th Session.*

William Bailey.

1803—26*th Session.*

Peter Sailley.

1804—27*th Session.*

Benjamin Mooers.

1804-1805—28*th Session.*

Benjamin Mooers.

1806—29*th Session.*

William Bailey.

1807—30*th Session.*

Nathaniel Z. Platt.

1808—31*st Session.*

Elisha Arnold.

1808-9—32*d Session.*

Kinner Newcomb.

1810—33*d Session.*

Gates Hoit.

1811—34*th Session.*

Gates Hoit.

35*th Session.*

Gates Hoit.

1812-13—36*th Session.*

Allen R. Moore.

1814—37*th Session.*

Allen R. Moore.

1814-15—38*th Session.*

Robert Platt.

1816—39*th Session.*

Benjamin Mooers.

1816-17—40*th Session.*

Benjamin Mooers.

1818—41*st Session.*

Gates Hoit.

1819—42*d Session.*

Ebenezer Brownson.

1820—43*d Session.*

Platt Newcomb.

1820-21—44*th Session.*

Platt Newcomb.

1822—45*th Session.*

Abijah North.

1823—46*th Session.*

Azariah C. Flagg.

1824—47*th Session.*

Azariah C. Flagg.

1825—48*th Session.*

Josiah Fisk.

1826—49*th Session.*

Josiah Fisk.

1827—50*th Session.*

Bela Edgarton.

1828—51*st Session.*

Bela Edgarton.

1829—52*d Session.*

Bela Edgarton.

1830—53*d Session.*

Heman Cady.

1831—54*th Session.*

John Walker.

1832—55*th Session.*

John Walker.

1833—56*th Session.*

Miles Stevenson.

1834—57*th Session.*

Miles Stevenson.

1835—58*th Session.*

Lemuel Stetson.

1836—59*th Session.*

Lemuel Stetson.

1837—60*th Session.*

Cornelius Halsey.

1838—61*st Session.*

Cornelius Halsey.

1839—62*d Session.*
Abijah North.

1840—63*d Session.*
Abijah North.

1841 64*th Session.*
George M. Beckwith.

1842—65*th Session.*
Lemuel Stetson.

1843—66*th Session.*
Julius C. Hubbell.

1844—67*th Session.*
Julius C. Hubbell.

1845—68*th Session.*
Noyes P. Gregory.

1846—69*th Session.*
Noyes P. Gregory.

1847—70*th Session.*
Rufus Heaton.

1848—71*st Session.*
Rufus Heaton.

1849—72*d Session.*
Albert G. Carver.

1850—73*d Session.*
Gorton T. Thomas.

1851—74*th Session.*
Henry G. Hewitt.

1852—75*th Session.*
Jacob H. Holt.

COLUMBIA COUNTY.

1788—11*th* *Session.*

William Powers,
Peter Silvester,
John Livingston.

1788-9—12*th* *Session.*

John Bay,
Matthew Adgate,
John Kortz.

1789-90—13*th* *Session.*

John Livingston,
Ezekiel Gilbert,
James Savage.

1791—14*th* *Session.*

Stephen Hogeboom,
James Savage,
Matthew Adgate.

1792—15*th* *Session.*

Lawrence Hogeboom,
Benjamin Birdsall,
James Savage,
Jacob Ford,
Henry Livingston,
Jared Coffin.

1792-93—16*th* *Session.*

Benjamin Birdsall,
Stephen Hogeboom,
Matthew Adgate,
Samuel Tenbrook,
Jared Coffin,
Philip Frisbee.

1794—17*th* *Session.*

Matthew Scott,
Matthew Adgate,
John Bay,
James Brebner,
Ambrose Spencer,
Dirck Gardinier.

1795—18*th* *Session.*

John Ray,
Matthew Adgate,
Phillip L. Hoffman,
Elisha Jenkins,
James Brebner,
Matthew Scott.

1796—19*th Session.*

Samuel Ten Broeck,
Patrick Hamilton,
Benjamin Birdsall,
Stephen Hogeboom,
Philip L. Hoffman,
James Brebner.

1797—20*th Session.*

John C. Hogeboom,
Caleb Benton,
John McKinstry,
Peter J. Vosburgh,
Jonathan Warner,
Palmer Cady.

1798—21*st Session.*

John C. Hogeboom,
Caleb Benton,
Killian Hogeboom,
Samuel Ten Broeck,
Elisha Jenkins,
Peter J. Vosburgh.

1798-99—22*d Session.*

John McKinstry,
Peter B. Ten Broeck,
Elisha Gilbert,
Samuel Ten Broeck,
Killian Hogeboom,
Charles McKinstry.

1800—23*d Session.*

Charles McKinstry,
Ezekiel Gilbert,
Jacob R. Van Rensselaer,
Robert T. Livingston,
John Noyes,
Anson Pratt.

1800-1—24*th Session.*

Dirck Gardenier,
Ezekiel Gilbert,
Asa Douglass,
William Cantine,
Elisha Williams,
John Livingston.

1802—25*th Session.*

Henry W. Livingston,
Moses Younglove,
Josiah Holley,
Peter Van Alstyne,
Thomas Broadhead,
Samuel Ten Broeck.

1803—26*th Session.*

Aaron Kellogg,
Samuel Edmonds,
Peter Silvester,
Moncrief Livingston.

1804—27th *Session.*

Samuel Ten Broeck,
Stephen Miller,
James J. Van Allen,
Benjamin Birdsall.

1804-5—28th *Session.*

Peter Silvester,
Jason Warner,
William W. Van Ness,
Moncrief Livingston.

1806—29th *Session.*

William W. Van Ness,
Peter Silvester,
Jason Warner,
Moncrief Livingston.

1807—30th *Session.*

Anson Pratt,
Gaius Stebbins,
Elisha Gilbert, Jr.,
Peter Sharp.

1808—31st *Session.*

Elisha Williams,
Jacob Rutsen Van Rensselaer,
Thomas Broadhead,
Jason Warner.

1808-9—32d *Session.*

Jacob R. Van Rensselaer,
Moncrief Livingston,
Gaius Stebbins,
James Hyatt.

1810—33d *Session.*

Thomas P. Grosvenor,
Henry W. Livingston,
Anson Pratt,
William Lusk.

1811—34th *Session.*

Jacob R. Van Rensselaer,
Thomas P. Grosvenor,
James Vanderpoel,
Augustus Tremain.

1812—35th *Session.*

Jacob R. Van Rensselaer,
Thomas P. Grosvenor,
Timothy Oakley,
?

1812-13—36th *Session.*

Jacob R. Van Rensselaer,
Elisha Williams,
Aaron Olmstead,
Alan Speldon.

1814—37*th Session.*

Henry Rockefeller,
John L. Van Allen, Jr.,
Elisha Williams,
Jacob R. Van Rensselaer.

1814-15—38*th Session.*

Henry Livingston,
Elisha Williams,
J. Rutsen Van Rensselaer,
Augustus Tremain.

1816—39*th Session.*

Jacob R. Van Rensselaer,
Henry Livingston,
James Vanderpoel,
John Whiting.

1816-17—40*th Session.*

Gerrit Cack,
John Pixley,
Hezekiah Hurlburt,
Elisha Williams.

1818—41*st Session.*

Thomas Bay,
Walter Patterson,
Peter Van Vleck,
Benjamin Hilton.

1819—42*d Session.*

Henry Livingston,
Jacob R. Van Rensselaer,
Jonathan Lapham,
Barent Van Buren.

1820—43*d Session.*

Elisha Williams,
Thomas Brodhead,
John J. Van Valkenburgh,
Azariah Pratt.

1820-21—44*th Session.*

Elisha Williams,
James Vanderpoel,
John Bryan,
Isaac B. Williams.

1822—45*th Session.*

Augustus Tremain,
Elisha Gilbert, Jr.,
George T. Snyder,
Philip P. Clum.

1823—46*th Session.*

John Van Deusen,
Abraham P. Holdridge,
Stephen Storm.

1824—47*th* *Session.*

John King, Joseph D. Monell,
Thomas Bay.

1825—48*th* *Session.*

Ambrose L. Jordan, Joseph Lord,
Killian Miller.

1826—49*th* *Session.*

Aaron Vanderpoel, Jonathan Hill,
Adam J. Strevel.

1827—50*th* *Session.*

Isaac Mills, Simon Rockefeller,
Jacob P. Mesick.

1828—51*st* *Session.*

Elisha Williams, Abel S. Peters,
Killian Miller.

1829—52*d* *Session.*

Henry W. Livingston, Peter Van Beuren,
Abraham P. Holdridge.

1830—53*d* *Session.*

Oliver Wiswall, Aaron Vanderpoel,
Jonathan Lapham.

1831—54*th* *Session.*

John W. Edmonds, Pliny Hudson,
John S. Harris.

1832—55*th* *Session.*

Leonard W. Ten Broeck, Tobias L. Hogeboom,
Medad Butler.

1833—56*th* *Session.*

Anthony Boucher, John Murdock,
Bastian C. Lasher.

1834—57*th* *Session.*

John Snyder, Henry C. Barnes,
John F. Collin.

1835—58*th Session.*

Horace Stevens, Julius Wilcoxson.
Jacob Shafer.

1836—59*th Session.*

Peter Groat, Jr., Adam J. Shaver,
Charles B. Dutcher.

1837—60*th Session.*

Rufus Reed, John S. Vosburgh,
William W. Hoysradt.

1838—61*st Session.*

William H. Tobey, Abraham Bain,
William A. Dean.

1839—62*d Session.*

Henry Hogeboom, Harry Cornwell,
Peter R. Livingston.

1840—63*d Session.*

Robert McKinstry, Jonas H. Miller,
Justin Niles.

1841—64*th Session.*

William G. Mandaville, Waterman Lippit,
John Milham.

1842—65*th Session.*

Abraham J. Van Alstyne, James Knickerbacker,
Jared Winslow.

1843—66*th Session.*

Lucas Hoes, Peter Poucher,
Anson Brown.

1844—67*th Session.*

Uriah Edwards, Peter P. Rossman,
William A. Carpenter.

1845—68*th Session.*

Elijah Bagg, William M. Bunker,
Peter J. Bachman.

1846—69*th Session.*

William E. Heermance, Jeremiah Hover,
Levi Pitts.

1847—70*th Session.*

John S. Gould, William M. Miller.

1848—71*st Session.*

1. Jonas H. Miller, 2. Charles B. Osborn.

1849—72*d Session.*

1. James M. Strever, 2. Daniel S. Curtis.

1850—73*d Session.*

1. Philip G. Lasher, 2. John H. Overhiser.

1851—74*th Session.*

1. John D. Langdon, 2. Philetus W. Bishop.

1852—75*th Session.*

1. Wesley R. Gallup. 2. George Van Santvoord.

CORTLAND COUNTY.

1810—33*d Session.*

Ephraim Fish.

1811—34*th Session.*

Billy Trowbridge.

1812—35*th Session.*

Billy Trowbridge,

1812-13—36*th Session.*

Billy Trowbridge.

1814—37*th Session.*

William Mallery.

1814-15—38*th Session.*

Samuel G. Hathaway.

1816—39*th Session.*

Joshua Ballard.

1816-17—40*th Session.*

John Miller.

1818—41*st Session.*

Samuel G. Hathaway.

1819—42*d Session.*

Joseph Reynolds.

1820—43*d Session.*

John Miller.

1820-21—44*th Session.*

John Osborn.

1822—45*th Session.*

Daniel Sherwood.

1823—46*th Session.*

Daniel Sherwood. John Gillett.

1824—47*th Session.*

Mathias Cook, William Barto, jun.

1825—48*th Session.*

Josiah Hart, James Chatterton.

1826—49*th Session.*

John Lind, Augustus Donelly.

1827—50*th Session.*

Nathan Dayton Cephas Comstock.

1828—51*st Session.*

Nathan Dayton, John L. Boyd.

1829—52*d Session.*

Gideon Curtis, Alanson Carley.

1830—53*d Session.*

Henry Stephens, Chauncey Keep.

1831—54*th Session.*

Fredus Howard, Charles Richardson.

1832—55*th Session.*

Andrew Dickson, Jonathan L. Woods.

1833—56*th Session.*

David Mathews, Enos S. Halbert.

1834—57*th Session.*

Oliver Kingman, Stephen Bogardus.

1835—58*th Session.*

Barah Niles, Aaron Brown.

1836—59*th Session.*

Chauncey Keep, Cephas Comstock.

1837—60*th Session.*

Josiah Hine, John Thomas.

1838—61*st Session.*

John Osgood, David Mathews.

1839—62*d Session.*

George S Green, George Isaacs.

1840—63*d Session.*

Jabez B. Phelps, William Barnes.

1841—64*th Session.*

Nathan Heaton, Lovel G. Mickels.

1842—65*th Session.*

Oren Stimson, Jesse Ives.

1843—66*th Session.*

Harvey McGraw. George N. Niles.

1844—67*th Session.*

John Kingman, Jun., Platt F. Grow.

1845—68*th Session.*

John Pierce, 2d., George J. J. Barber.

1846—69*th Session.*

Amos Graves,	John Miller.

1847—70*th Session.*

Timothy Green.

1848—71*st Session.*

James Comstock.

1849—72*d Session.*

Ira Skeele.

1850—73*d Session.*

Lewis Kingsley.

1851—74*th Session.*

Alvan Kellogg.

1852—75*th Session.*

George W. Bradford.

DELAWARE COUNTY.

1798—21*st Session.*

Nathaniel Wattles,	William Horton.

1798-99 22*d Session.*

Elias Butler,	Erastus Root.

1800—23*d Session.*

Sluman Wattles,	Patrick Lamb.

1800-1—24*th Session.*

Gabriel North,	Erastus Root.

1802—25*th Session.*

Gabriel North,	Erastus Root.

1803—26*th Session.*

John Lamb,	Elias Osborne.

1804—27*th Session.*

Elias Osborne, Gabriel North.

1804-5—28*th Session.*

Anthony Marvine, Adam J Dole.

1806—29*th Session*

Gabriel North, Anthony Marvine.

1807—30*th Session.*

Joshua Pine, John T. More.

1808—31*st Session.*

John T. More, Gabriel North.

1808-9—32*d Session.*

David St. John, Daniel Fuller.

1810—33*d Session.*

John T. More, Elias Osborne.

1811—34*th Session.*

David St John, Daniel Fuller.

1812—35*th Session.*

Isaac Ogden, Daniel H. Burr.

1812-13—36*th Session.*

Robert Clark, Andrew Craig, jun.

1814—37*th Session.*

John T. Moore. Isaac Ogden.

1814-15—38*th Session.*

Asahel E. Paine, Robert Clark.

1816—39*th Session.*

Henry Leavenworth, William Dewey.

1816-17—40*th Session.*

Martin Keeler, Asahel E. Paine.

1818—41*st Session.*

Erastus Root,	William Beach.

1819—42*d Session.*

Erastus Root,	James Ells.

1820—43*d Session.*

Erastus Root,	Peter Pine.

1820-21—44*th Session.*

Erastus Root,	John H. Gregory.

1822—45*th Session.*

Asa Grant,	Benjamin Benedict.

1823—46*th Session.*

Asa Grant,	Samuel Rexford.

1824—47*th Session.*

Peter Pine,	James Ells.

1825—48*th Session.*

Harman J. Quackenboss,	Jabez Bostwick.

1826—49*th Session.*

Erastus Root,	William Townsend.

1827—50*th Session.*

Erastus Root,	John Thompson.

1828—51*st Session.*

Erastus Root.	Edward Doyle.

1829—52*d Session.*

James G. Redfield,	William S. McCrea.

1830—53*d Session.*

Erastus Root,	Mathew Halcott.

1831—54*th Session.*

Peter Pine,	David P. Mapes.

1832—55*th* *Session.*

James Hughston, James Coulter.

1833—56*th* *Session.*

Stoddard Stevens, John Edgerton.

1834—57*th* *Session.*

Samuel Gordon, Amasa J. Parker.

1835—58*th* *Session.*

William B. Ogden, Dubois Burhans.

1836—59*th* *Session.*

James W. Knapp, John Griffin.

1837—60*th* *Session.*

Jesse Booth, Thomas J. Hubbell.

1838—61*st* *Session.*

Darius Maples, Cornelius Bassett.

1839—62*d* *Session.*

Ichabod Bartlett, Jonas More.

1840—63*d* *Session.*

Orson M. Allaben, Nathan Bristol.

1841—64*th* *Session.*

Stephen H. Keeler, Charles Knapp.

1842—42*d* *Session.*

rrin Griffin, Samuel Eells.

1843—66*th* *Session.*

Milton Bostwick, Nelson K. Wheeler.

1844—67*th* *Session.*

Edward J. Burhans, Jesse Palmer.

1845—68*th* *Session.*

John McDonald, Linus Porter.

1846—69*th Session.*

Orrin Foote,
Reuben Lewis.

1847—70*th Session.*

Jonathan C. Allaben,
Donald Shaw.

1848—71*st Session.*

1. Platt Townsend,
2. John Calhoun.

1849—72*d Session.*

1. James E. Thompson,
2. Luther Butts.

1850—73*d Session.*

1. George H. Winsor,
2. Richard Morse.

1851—74*th Session.*

1. Samuel Doyle,
2. William Gleason, jr.

1852—75*th Session.*

1. Hezekiah Elwood,
2. Lewis Mills.

DUTCHESS COUNTY.

1777—1*st Session.*

Dirck Brinkerhoff,
Anthony Hoffman,
Gilbert Livingston,
Jacobus Swartwout,
Andrew Moorhouse,
John Schenck,
Egbert Benson.

1778—2*d Session.*

Egbert Benson,
Anthony Hoffman,
Joseph Crane, jr.,
Samuel Dodge,
Jacobus Swartwout,
Dirck Brinckerhoff.

1779—3*d Session.*

Nathaniel Sacket,
Samuel Dodge,
Henry Luddington,
Ananias Cooper,
Dirck Brinckerhoff,
Egbert Benson,
Brinton Paine.

1780-81—4*th Session.*

(See note to Albany county.)

1781-82—5*th Session.*

Cornelius Humfrey,
Dirck Brinkerhoff,
Thomas Storm,
Jacobus Swartwout,
Jonathan Dennis,
Abraham Paine,
Ebenezer Husted.

1782-83—6*th Session.*

Jacobus Swartwout,
Benjamin Birdsall,
Cornelius Humfrey,
Ebenezer Husted,
Jonathan Dennis,
Thomas Storm,
Mathew Patterson.

1784—7*th Session.*

Cornelius Humfrey,
Dirck Brinckerhoff,
Anthony Hoffman,
Mathew Patterson,
Jonathan Dennis
Ebenezer Husted,
Thomas Storm.

1784-5—8*th Session.*

Cornelius Humfrey,
Mathew Patterson,
James Talmadge,
Abraham Brinckerhoff,
Dirck Brinckerhoff,
Ebenezer Cary,
Brinton Paine.

1786—9*th Session.*

Dirck Brinckerhoff,
Lewis Duboys,
Mathew Patterson,
Jacob Griffin,
John DeWitt, jr.,
Henry Ludenton,
Brinton Paine.

1787—10*th Session.*

Dirck Brinckerhoff,
Lewis Duboys,
Mathew Patterson,
John DeWitt, jr.,
Jacob Griffin,
Henry Ludenton,
Brinton Paine.

1788—11*th Session.*

Egbert Benson,
Thomas Tillotson,
John DeWitt, jr.,
Peter Cantine, jr.,
Mathew Paterson,
Morris Graham,
Isaac Bloom.

1788-9—12*th Session.*

Samuel A. Barker,
Jonathan Akins,
Jacob Griffen,
John DeWitt,
Gilbert Livingston,
Mathew Patterson,
Isaac Bloom.

1889-90—13*th Session.*

Isaac Bloom,
Thomas Tillotson,
Jacob Griffen,
Ebenezer Husted,
Samuel A. Barker,
Isaac I. Tallman,
Joseph Crane, jr.

1791—14*th Session.*

James Kent,
David Van Ness,
Henry Schenck,
James Tallmadge,
Isaac Bloom,
Jonathan Akin,
Samuel A. Barker.

1792—15*th Session.*

Jonathan Akin,
Isaac Bloom,
Morgan Lewis,
James Tallmadge,
Samuel Augustus Barker,
Daniel Graham.
Mathew Patterson.

1792-3—16*th Session.*

James Kent,
Barnabas Payen,
William Radclift,
Jonathan Akin,
Josiah Holly,
Ebenezer Mott,
Mathew Patterson.

1794—17*th Session.*

John DeWitt,
Jacob Radclift,
David Brooks,
Jesse Oakley,
Isaac Van Wyck,
Jacob Bockee,
Samuel Augustus Barker.

1795—18*th Session.*

David Brooks,
Jacob Radclift,
Samuel A. Barker,
Jacob Bockee,
Isaac Van Wyck,
Jacob Smith,
Jesse Oakley.

1796—19*th Session.*

Jesse Oakley,
Isaac Van Wyck,
David Brooks,
Jesse Thompson,
Jacob Smith,
Solomon Sutherland,
Richard Davis.

1797—20*th Session.*

Jesse Oakley,
Samuel A. Barker,
Jesse Thompson,
Jacob Smith,
Richard Davis,
William Pearce,
William Wheeler,
William B. Verplanck,
Jacob Bockee,
Joseph Crane, jun.

1798—21*st Session.*

Luther Holly,
John Thomas,
Joseph Potter,
Jacob Smith,
Samuel Towner,
Lemuel Clift.
William Barker,
William B. Verplanck,
Philip I. Schuyler,
Jesse Thompson.

1798-99—22*nd Session.*

Ebenezer Mott,
Platt Smith,
Henry Dodge,
Robert Johnston,
Jonathan Soule,
Lemuel Clift,
Abraham Adriance,
William Tabor,
William Pearce,
John Van Benthuysen.

1800—23*rd Session.*

Ebenezer Mott,
Isaac Sherwood,
William Emott,
William Taber,
Robert Johnston,
John Van Benthuysen,
Abraham Adriance,
Samuel Towner,
William Barker,
Joseph C. Field.

1800-01—24*th Session.*

Elisha Barlow,
Ebenezer Mott,
Benjamin Akin,
Isaac Sherwood,
Abraham Adriance,
Nicholas H. Emigh,
Robert Johnston,
John M. Thurston,
Zalmon Sandford,
Smith Thompson.

1802—25*th Session.*

Theodorus Bailey,
John M. Thurston,
John Thompson,
Alexander Spencer,
Elisha Barlow,
Harry Garrison,
Nicholas H. Emigh,
Benjamin Akin,
John Paterson,
Abraham Adriance.

1803—26*th Session.*

John Jewitt,
John Martin,
Theodorus R. Van Wyck,
James Winchell,
Philip Spencer, jun.
Thomas Mitchell,
Joseph C. Field.

1804—27*th Session.*

William Taber,
Zalmon Sanford,
Joseph E. Haff,
Benajah Thompson,
Thomas Mitchell,
John Martin,
Theodorus R. Van Wyck.

1805—28*th Session.*

Isaac Hunting,
Job Crawford,
Isaac Sherwood,
John M. Thurston,
John Paterson,
Abraham H. Schenck,
John Van Benthuysen.

1806—29*th Session.*

John Van Benthuysen,
Abraham H. Schenck,
Joseph C. Field,
William D. Williams,
Veniah Woolley,
Barnabas Carver,
Benjamin Herrick.

1807—30*th Session.*

Martin E. Winchell,
Tobias L. Stoutenburgh,
John Haight,
Veniah Woolley,
Theron Rudd,
Aaron Hazen,
John Storm.

1808—31*st Session.*

Martin E. Winchell,
John Haight,
Tobias L. Stoutenburgh,
Cyrenus Crosby,
Devoue Bailey,
George Casey,
Albro Akin.

1808-9—32*d Session.*

Samuel A. Barker,
George Bloom,
Ebenezer Haight,
Jesse Thompson,
Derick A. Brinckerhoff,
Benajah Thompson.

1810—33*d Session.*

David Brooks,
Alexander Neily,
Koert Dubois,
Lemuel Clift,
Ebenezer Haight,
Isaac Van Wyck.

1811—34*th Session.*

Samuel Augustus Barker,
Koert Dubois,
Lemuel Clift,
Shadrach Sherman,
Alexander Neely,
Isaac Van Wyck.

1812—35*th Session.*

Henry Dodge,
Isaac Bryan,
Cyrus Benjamin,
Robert Weeks,
Joseph Arnold,
John Warren.

1812-13—36*th Session.*

Henry Dodge,
Isaac Bryan,
Joseph Arnold,
Cyrus Benjamin,
John Beadle,
John Warren.

1814—37*th Session.*

William A. Duer,
Jesse Thompson,
James Emott,
Samuel Mott,
Joseph Potter.

1814-15—38*th Session.*

William A. Duer,
James Grant,
James Emott,
Joel Benton,
John Beadle.

1816—39*th Session.*

William A. Duer,
Isaac Smith,
Thomas J. Oakley,
John B. Van Wyck,
Zachariah Hoffman.

1816-17—40*th Session.*

Joel Benton,
William A. Duer,
James Emott,
Nathaniel Pendleton,
Abiel Sherman.

1818—41*st Session.*

Thomas J. Oakley,
Andrew Pray,
John W. Wheeler,
Benjamin Haxtun,
Jehiel Sackett.

1819—42*d Session.*

Thomas J. Oakley,
Jesse Thompson,
James Ketchum,
David Tomlinson,
John Beadle.

1820—43*d Session.*

Thomas J. Oakley,
Jacob Doughty,
Matthew Mesier,
John W. Wheeler,
Abraham Bockee.

1820-21—44*th Session.*

Joseph J. Jackson,
Israel Harris,
Albro Akin,
Coert Dubois,
Benjamin H. Conklin.

1822—45*th Session.*

Philo Ruggles,
Benjamin Sherman,
John Cox,
Daniel Northrup,
George Vanderburgh.

1823—46*th Session.*

Samuel M. Thurston,
Peter R. Livingston,
Wheeler Gilbert,
Prince Hoag.

1824—47*th Session.*

James Tallmadge,
Gilbert Thorne,
Alfred S. Pell.
John Klapp.

1825—48*th Session.*

Gilbert Thorne,
John Armstrong, Jr.,
Eli Angevine,
Enos Hopkins.

1826—49*th Session.*

Isaac Adriance,
Daniel D. Akin,
Martin Lawrence,
Thomas Taber, 2d.

1827—50*th Session.*

Henry A. Livingston,
Jacob C. Elmendorf,
Egbert Cary,
Samuel B. Halsey.

1828—51*st Session.*

Nathaniel P. Tallmadge,
Francis A. Livingston,
George W. Slocum.
Taber Belding.

1829—52*d Session.*

Stoddard Judd,
Elijah Baker, Jr.,
Tobias Teller,
Stephen D. Van Wyck.

1830—53*d Session.*

Jacob Van Ness,
George P. Oakley,
James Hughson,
Philo M. Winchell.

1831—54*th Session.*

William Hooker,
Joel Benton,
John E. Townsend,
Samuel B. Halsey.

1832—55*th Session.*

Robert Coffin,
Ely Hamblin,
Michael S. Martin,
Israel Shadbolt.

1833--56*th* *Session.*

Henry Conklin,
Daniel D. Akin,
Joel Brown,
George Lambert.

1834—57*th* *Session.*

Henry Conklin,
James Mabbett,
William H. Bostwick,
Theodore V. W. Anthony.

1835—58*th* *Session.*

Stoddard Judd,
Stephen Thorn,
Theodore V. W. Anthony.
David Barnes, Jr.

1836—59*th* *Session.*

Stoddard Judd,
Abijah G. Benedict,
Cornelius H. Cornell,
William Ens.

1837—60*th* *Session.*

John R. Myer,
David Sheldon,
Taber Belding.

1838—61*st* *Session.*

Freeborn Garretson,
Jacob Sisson,
Cornelius Dubois.

1839—62*d* *Session.*

Jacob Sisson,
Daniel Toffey,
Henry Conklin.

1840—63*d* *Session.*

Daniel Toffey,
Henry Conklin,
Amos Ryan.

1841—64*th* *Session.*

Jonathan Aikin,
Edmund Elmendorf,
John Thompson.

1842—65*th* *Session.*

Richard C. Van Wyck,
Peter K. Dubois,
John M. Ketcham.

1843—66*th Session.*

John M. Ketcham, John Elseffer,
Gilbert Bentley.

1844—67*th Session.*

Alexander H. Coffin, John K. Mead,
Ambrose M. Pinney.

1845—68*th Session.*

Freeborn Garretson, Epenetus Crosby,
Walter Sherman

1846—69*th Session.*

George T. Pierce, Daniel Sherwood,
Elnathan Haxtun.

1847—70*th Session.*

Epenetus Crosby, Aves J. Vanderbilt,
Walter Sherman.

1848—71*st Session.*

1. Edgar Vincent, 2. David Collins, Jr.,
3. James Hammond.

1849—72*d Session.*

1. Edgar Vincent, 2. Wesley Watts,
3. James Hammond.

1850—73*d Session.*

1. Charles Robinson, 2. Miner C. Story,
3. Stephen Haight,

1851—74*th Session.*

1. Charles Robinson, 2. Howland R. Sherman,
3. William H. Teller.

1852—75*th Session.*

1. John S. Emans, 2. John M. Keese,
3. Augustus Martin.

ERIE COUNTY.

1823—46*th Session*.

Ebenezer F. Norton.

1824—47*th Session*.

Samuel Wilkeson.

1825—48*th Session*.

Calvin Fillmore.

1826—49*th Session*.

Reuben B. Heacock.

1827—50*th Session*.

David Burt, Oziel Smith.

1828—51*st Session*.

David Burt, Peter B. Porter.

1829—52*d Session*.

David Burt, Millard Fillmore.

1830—53*d Session*.

Millard Fillmore, Edmund Hall.

1831—54*th Session*.

Millard Fillmore, Nathaniel Knight.

1832—55*th Session*.

Horace Clark, William Mills.

1833—56*th Session*.

Horace Clark, William Mills.

1834—57*th Session*.

Joseph Clary, Carlos Emmons.

1835—58*th Session*.

William A. Moseley. Ralph Plumb.

1836—59*th Session*.

George P. Barker, Wells Brooks.

1837—60*th Session.*

Squire S. Case, Benjamin O. Bivins,
Elisha Smith.

1838—61*st Session.*

Lewis F. Allen, Asa Warren,
Cyrenus Wilbur.

1839—62*d Session.*

Jacob A. Barker, Henry Johnson,
Truman Cary.

1840—63*d Session.*

Seth C. Hawley, Aaron Salisbury,
Stephen Osborn.

1841—64*th Session.*

Seth C. Hawley, Carlos Emmons,
Stephen Osborn.

1842—65*th Session.*

Squire S. Case, Bela H. Colgrove,
William A. Bird.

1843—66*th Session.*

George R. Babcock, Milton McNeal,
Wells Brooks.

1844—67*th Session.*

Daniel Lee, Elisha Smith,
Amos Wright.

1845—68*th Session.*

Daniel Lee, John T. Bush,
Truman Dewey.

1846—69*th Session.*

Nathan K. Hall, James Wood,
John T. Bush.

1847—70*th* *Session.*

Horatio Shumway,
Obadiah J. Green,
William H. Pratt,
John D. Howe.

1848—71*st* *Session.*

1. Elbridge G. Spaulding,
2. Harry Slade,
3. Ira E. Irish,
4. Charles C. Severance.

1849—72*d* *Session.*

1. Benoni Thompson,
2. Augustus Raynor,
3. Marcus Neal,
4. Luther Buxton.

1850—73*d* *Session.*

1. Orlando Allen,
2. Elijah Ford,
3. Ira E. Irish,
4. Joseph Candee.

1851—74*th* *Session.*

1. Orlando Allen,
2. William A. Bird,
3. Henry Atwood,
4. Charles C. Severance.

1852—75*th* *Session.*

1. Israel T. Hatch,
2. Jasper B. Youngs,
3. Aaron Riley,
4. Joseph Bennett.

ESSEX COUNTY.

1803—26*th* *Session.*

Thomas Stower.

1804—27*th* *Session.*

Theodorus Ross.

1805—28*th* *Session.*

Theodorus Ross.

1806—29*th* *Session.*

Theodorus Ross.

1807—30*th* *Session.*

Stephen Cuyler.

1808—31*st Session.*

Benjamin Pond.

1808-9—32*d Session.*

Benjamin Pond.

1810—33*d Session.*

Benjamin Pond.

1811—34*th Session.*

Delevan Delance, jun.

1812—35*th Session.*

Delevan Delance.

1812-13—36*th Session.*

Manoah Miller.

1814—37*th Session.*

Levi Thompson.

1814-15—38*th Session.*

Reuben Sanford.

1816—39*th Session.*

Reuben Sanford.

1816-17—40*th Session.*

Reuben Sanford.

1818—41*st Session.*

John Hoffnagle.

1819—42*d Session.*

John Hoffnagle.

1820—43*d Session.*

John Hoffnagle.

1820-21—44*th Session.*

Ebenezer Douglass.

1822—45*th Session.*

Isaac Finch.

1823—46*th Session.*

Asa Adgate.

1824—47*th Session.*

Isaac Finch.

1825—48*th Session.*

William Smith:

1826—49*th Session.*

William Smith.

1827—50*th Session.*

John Hoffnagle.

1828—51*st Session.*

Ezra C. Gross.

1829—52*d Session.*

Ezra C. Gross.

1830—53*d Session.*

William Kirby.

1831—54*th Session.*

Joseph S. Weed.

1832—55*th Session.*

Isaac Vanderwarker.

1833—56*th Session.*

Almerin Smith.

1834—57*th Session.*

Barnabas Myrick.

1835—58*th Session.*

Thomas A. Tomlinson.

1836—59*th Session.*

Thomas A. Tomlinson.

1837—60*th Session.*

Gideon Hammond.

1838—61*st Session.*

Gideon Hammond.

1839—62*d Session.*

Gideon Hammond.

1840—63*d Session.*

George A. Simmons.

1841—64*th Session.*

George A. Simmons.

1842—65*th Session.*

George A. Simmons.

1843—66*th Session.*

Samuel Shumway.

1844—67*th Session.*

Gideon Hammond.

1845—68*th Session.*

John C. Hammond.

1846—69*th Session.*

Caleb D. Barton.

1847—70*th Session.*

William H. Butrick.

1848—71*st Session.*

William H. Butrick.

1849—72*d Session.*

George W. Goff.

1850—73*d Session.*

George W. Goff.

1851—74*th Session.*

Abraham Welden.

1852—75*th Session.*

Abraham Welden.

FRANKLIN COUNTY.

1823—46*th Session.*

William Hogan.

1824—47*th Session.*

George B. R. Gove.

1825—48*th Session.*

Asa Hascall.

1826—49*th Session.*

Asa Hascall.

1827—50*th Session.*

James Campbell.

1828—51*st Session.*

Luther Bradish.

1829—52*d Session.*

Luther Bradish.

1830—53*d Session.*

Luther Bradish.

1831—54*th Session.*

James B. Spencer.

1832—55*th Session.*

James B. Spencer.

1833—56*th Session.*

Jabez Parkhurst.

1834—57*th Session.*

Jabez Parkhurst.

1835—58*th Session.*

Asa Hascall.

1836—59*th Session.*

Luther Bradish.

1837—60*th Session.*

Luther Bradish.

1838—61*st Session.*

Luther Bradish.

1839—62*d Session.*

Asa Hascall.

1840—63*d Session.*

John S. Eldredge.

1841—64*th Session.*

John S. Eldredge.

1842—65*th Session.*

Thomas R. Powell.

1843—66*th Session.*

Joseph H. Jackson.

1844—67*th Session.*

Francis D. Flanders.

1845—68*th Session.*

Hiram Horton.

1846—69*th Session.*

Sidney Lawrence.

1847—70*th Session*.

Joseph R. Flanders.

1848—71*st Session*.

Elos L. Winslow.

1849—72*d Session*.

George B. R. Gove.

1850—73*d Session*.

William A. Wheeler.

1851—74*th Session*.

William A. Wheeler.

1852—75*th Session*.

Darius W. Lawrence.

FULTON AND HAMILTON COUNTIES.

1839—62*d Session*.

James Yauncy.

1840—63*d Session*.

Langdon I. Marvin.

1841—64*th Session*.

Jenison G. Ward.

1842—65*th Session*.

John Patterson.

1843—66*th Session*.

John L. Hutchinson.

1844—67*th Session*.

James Harris.

1845—68*th Session*.

Garrett A. Newkirk.

1846—69*th Session.*

Clark S. Grinnell.

1847—70*th Session.*

Darius Moore.

1848—71*st Session.*

Isaac Benedict.

1849—72*d Session.*

John Culbert.

1850—73*d Session.*

Cyrus H. Brownell.

1851—74*th Session.*

John Stewart.

1852—75*th Session.*

Alfred N. Haner.

GENESEE COUNTY.

1808-9—32*d Session.*

William Rumsey.

1810—33*d Session.*

Chauncey Loomis.

1811—34*th Session.*

Chauncey Loomis.

1812—35*th Session.*

Zacheus Colby.

1812-13—36*th Session.*

James Ganson.

1814—37*th Session.*

James Ganson.

1814-15—38*th Session.*

Isaac Sutherland

1816—39*th Session.*

James Ganson, Isaac Wilson.
Elizur Webster.

1816-17—40*th Session.*

James Ganson, Elizur Webster,
Isaac Wilson.

1818—41*st Session.*

Isaac Southerland, Abraham Matteson,
Gilbert Howell.

1819—42*d Session.*

Abraham Matteson, Gilbert Howell,
Isaac Sutherland.

1820—43*d Session.*

Fitch Chipman, Robert McKay,
Gideon T. Jenkins.

1820-21—44*th Session.*

Fitch Chipman, Samuel M. Hopkins,
Jesse Hawley.

1822—45*th Session.*

Benedict Brooks, Samuel McWhorter,
Robert Anderson.

1823—46*th Session.*

Josiah Churchill, Apollus P. Augur,
William Bristol. Otis Turner.

1824—47*th Session.*

Shubael Dunham, Orrin Follett,
James Ganson, Horace S. Turner.

1825—48*th Session.*

Shubael Dunham, Jeremiah Brown,
Fitch Chipman, Gaius B. Rich.

1826—*49th Session.*

Josiah Churchill, Phineas Stanton,
David Scott.

1827—*50th Session.*

John B. Skinner, Josiah Churchill.
Shubael Dunham.

1828—*51st Session.*

John B. Skinner, Dennis Blakeley,
Trumbull Carey.

1829—*52d Session.*

John B. Skinner, John Hascall,
Calvin P. Bailey.

1830—*53d Session.*

Calvin P. Bailey, Stephen Griswold,
Timothy Fitch.

1831—*54th Session.*

Charles Woodworth, Robert Earll, jun.,
Stephen Griswold.

1832—*55th Session.*

Henry Hawkins, James Sprague, 2d.,
Seth M. Gates.

1833—*56th Session.*

Charles Woodworth, Rufus Robertson,
Peter Patterson.

1834—*57th Session.*

Rufus Robertson, Truman Lewis,
Peter Patterson.

1835—*58th Session.*

Truman Lewis, Samuel Richmond,
Amos Tyrrel, jun.

1836—*59th Session.*

Amos Tyrrel, jun., Samuel Richmond,
Charles O. Shepard.

1837—60*th Session.*

Charles O. Shepard,	Reuben Benham,
Leverett Seward,	John A. McElwaine.

1838—61*st Session.*

John Head,	Leverett Seward,
Reuben Benham,	Andrew H. Green.

1839—62*d Session.*

Andrew H. Green,	Alva Jefferson,
John Head,	Horace Healy.

1840—63*d Session.*

George W. Lay,	Horace Healy,
John W. Brownson,	Alva Jefferson.

1841—64*th Session.*

John W. Brownson,	Isaac N. Stoddard,
David Scott,	Samuel Richmond.

1842—65*th Session.*

Albert Smith,	Robinson Smiley.

1843—66*th Session.*

Robinson Smiley,	Ira Wait.

1844—67*th Session.*

Chester Hannum,	Charles P. Brown.

1845—68*th Session.*

Chester Hannum,	Aaron Long.

1846—69*th Session.*

Aaron Long,	Heman Blodgett.

1847—70*th Session.*

Heman Blodgett,	Alonzo S. Upham.

1848—71*st Session.*

1. Tracy Pardee.	2. Alonzo S. Upham.

1849—72*d Session.*

1. Tracy Pardee. 2. Martin C. Ward.

1850—73*d Session.*

1. John C. Gardner. 2. Martin C. Ward.

1851—74*th Session.*

1. Albert Rowe. 2. Levi Fiske.

1852—75*th Session*

1. Albert Rowe. 2. Levi Fiske.

GREENE COUNTY.

1800-1—24*th Session.*

Caleb Benton, Thomas E. Barker.

1802—25*th Session.*

Philip Conine, Jr., William Beach.

1803—26*th Session.*

George Hale, Martin G. Schuneman.

1804—27*th Session.*

Stoddard Smith, Stephen Simmons.

1804-5—28*th Session.*

Patrick Hamilton, Daniel Sayre.

1806—29*th Session.*

John Ely, James Thompson.

1807—30*th Session.*

Samuel Haight, James Thompson.

1808—31*st Session.*

Coenrad T. Houghtaling, Perez Steel.

1809—32*d Session.*

Eliakim Reed, James Gale.

1810—33*d Session.*

Ira Day, Benjamin Chapman.

1811—34*th Session.*

Jonas Bronk, William Beach.

1812—35*th Session.*

John Ely, Simon Sayre.

1812-13—36*th Session.*

John Adams, Perez Steel.

1814—37*th Session.*

William Frazer, Abraham Van Dyck.

1814-15—38*th Session.*

James Gale, Martin G. Van Bergen.

1816—39*th Session.*

James Powers, Jacob Roggen.

1816-17—40*th Session.*

Justus Squire, Levi Callender.

1818—41*st Session.*

John L. Bronk, Jairus Strong.

1819—42*d Session.*

James G. Foster, Isaac Van Loan.

1820—43*d Session.*

Perez Steele, Abijah Reed.

1820-21—44*th Session.*

Aaron Reed, Platt Adams.

1822—45*th Session.*

James Powers, Jacob Roggen.

1823—46*th Session.*

Williams Seaman, Reuben Hosford.

1824—47*th Session.*

Edward Daly, Caleb Coffin.

1825—48*th Session.*

Alvin Bushnell, Gilbert Bedell.

1826—49*th Session.*

Williams Seaman, Addison Porter.

1827—50*th Session.*

Perkins King, William Tuttle.

1828—51*st Session.*

William Faulkner, Jr., Elisha Bishop.

1829—52*d Session.*

Castle Seely, Moses Austin.

1830—53*d Session.*

Harman J. Quackenboss, Jonathan Miller.

1831—54*th Session.*

Lewis Benton, John J. Brandow.

1832—55*th Session.*

Dumah Tuttle, Erastus Hamilton.

1833—56*th Session.*

Henry Goslee, William Pierson.

1834—57*th Session.*

Sylvester Nichols, Benedict Bagley.

1835—58*th Session.*

Anthony Van Bergen, David Ingersoll.

1836—59*th Session.*

Luke Kiersted, Ambrose Baker.

1837—60*th Session.*

John Watson, Stephen Tryon

1838—61*st Session.*

Thomas B. Cooke,	Peter Hubbell.

1839—62*d Session.*

Thomas B. Cooke,	Platt Adams.

1840—63*d Session.*

Sylvester Nichols,	Gilbert Bedell.

1841—64*th Session.*

Furhand K. Cooke,	Daniel G. Quackenboss.

1842—65*th Session.*

John Laraway,	Andrew T. Van Slyke.

1843—66*th Session.*

Aaron Bushnell,	Philip Teats.

1844—67*th Session.*

Robert C. Field,	Lemuel C. Stimson.

1845—68*th Session.*

Garret W. Sager,	Deliverance B. Hervey.

1846—69*th Session.*

Neely Lawrence,	Peter W. Van Bergen.

1847—70*th Session.*

Almeron Marks,	William V. B. Adams.

1848—71*st Session.*

1. Alexander H. Palmer,	2. Frederick A. Fenn.

1849—72*d Session.*

1. Alexander H. Bailey,	Albert Tuttle.

1850—73*d Session.*

1. Alonzo Green,	2. Theodore L. Prevost.

1851—74*th Session.*

1. J. Atwater Cooke,	2. Henry Kinsley.

1852—75*th Session.*

1. Norman H. Gray, 2. Thomas Bedell, Jr.

HERKIMER COUNTY.

1792—15*th Session.*

Michael Myers.

1792-93—16*th Session.*

Michael Myers.

1794—17*th Session.*

Jedediah Sanger.

1795—18*th Session.*

Jedediah Sanger.

1796—22*d Session.*

Jonas Platt.

1797—20*th Session.*

Isaac Brayton, Henry McNeil,
Gaylord Griswold, Arthur Breese,
Joshus Leland. Lodowick Campbell,
Mathew Brown, jr.

1798—21*st Session.*

Gaylord Griswold, Benjamin Bowen,
Henry McNeal, Ludwick Campbell,
Nathan Smith, Isaac Foote,
Mathew Brown jun.

1798-99—22*d Session.*

Phineas Gates, Ludwick Campbell,
John Cummins, jun.

1800—23*d Session.*

John Mills, Thomas Manly,
John Myer.

1800-1801—24*th Session.*

Evans Wherry,
George Widrig,
Nathan Smith.

1802—25*th Session.*

Nathan Smith,
Samuel Merry, jun.
George Widrig,

1803—26*th Session.*

Samuel Wright,
George Widerick,
Stephen Miller.

1804—27*th Session.*

Evans Wharry,
Samuel Wright,
George Widrig.

1804-5—28*th Session.*

Evans Wharry,
George Widrig,
Samuel Wright.

1806—29*th Session.*

George Widrig,
Samuel Wright,
Eldad Corbet.

1807—30*th Session.*

George Widrig,
John Kennedy,
Samuel Wright.

1808—31*st Session.*

Westel Willoughby, jun.
Aaron Budlong,
John M. Petrie.

1808-9—32*d Session.*

John M. Petrie,
Aaron Budlong,
Westel Willoughby, jun.

1810—33*d Session.*

Thomas Manly,
Rudolph Devendorff,
Christopher P. Bellinger.

1811—34*th Session.*

Christopher P. Bellinger, Robert Burch,
Hosea Nelson.

1812—35*th Session.*

Robert Burch, Rudolph J. Shoemaker,
Samuel Woodworth.

1812-13—36*th Session.*

Rudolph J. Shoemaker, Hosea Nelson,
John Graves.

1814—37*th Session.*

Aaron Hackley, jun. Jonas Cleland,
Christopher P. Bellinger.

1814-15—38*th Session.*

Aaron Hackley, jun. - Jonas Cleland,
John McCombs.

1816—39*th Session.*

John McCombs, Henry Hopkins,
William D. Ford.

1816-17—40*th Session.*

Abijah Beckwith, George Rosekrantz,
William D. Ford.

1818—41*st Session.*

Aaron Hackley jun., Nichol Fosdick,
George Rosecrants.

1819—42*d Session.*

Nichol Fosdick, Jonas Cleland,
Henry Gros.

1820—43*d Session.*

James Orton, Jacob Markell,
Philo M. Hackley.

1820-1821—44*th Session.*

Simeon Ford, Thomas Manly,
Daniel Van Horne.

1822—45*th Session.*

Simeon Ford, Christopher P. Bellinger;
Robert Shoemaker,

1823—46*th Session.*

John Dygert, Abijah Beckwith,
Henry Tillinghast.

1824—47*th Session.*

Christopher P. Bellinger John Graves,
Caleb Budlong.

1825—48*th Session.*

Samuel Dexter, jr., Warner Folts,
Jacob Wire.

1826—49*th Session.*

Jonas Cleland, Edmund Varney,
Nicholas Schuyler, jr.

1827—50*th Session.*

Frederic P. Bellinger, Daniel C. Henderson,
Richard Smith, 2d.

1828—51*st Session.*

Abijah Mann, jr., David R. Carrier,
John P. Snell.

1829—52*d Session.*

Abijah Mann, jr., Cornelius Sloughter,
John R. Dygert.

1830—53*d Session.*

Frederic P. Bellinger, Russel Hopkins,
Abijah Mann, jr.

1831—54*th Session.*

Atwater Cooke, jr., Olmsted Hough,
Nicholas Lawyer.

1832—55*th Session.*

William C. Crain, Daniel Dygert,
David Thorp.

1833—56*th Session.*

Sherman Wooster, Joseph M. Pendergast,
Dudley Burwell.

1834—57*th Session.*

Charles Dyer, Timothy I. Campbell,
Augustus Beardslee.

1835—58*th Session.*

Henry Tillinghast, Charles Gray,
Peter P. Murphy.

1836—59*th Session.*

Stephen Ayres, Thomas Hawks,
Frederic Bellinger.

1837—60*th Session.*

Aaron Hackley, Henry L. Easton.

1838—61*st Session.*

Abijah Mann, jr., Volney Owen.

1839—62*d Session.*

Atwater Cooke, jr., Benjamin Carver.

1840—63*d Session.*

Daniel Bellinger, George Burch.

1841—64*th Session.*

Arphaxed Loomis, Michael Hoffman.

1842—65*th Session.*

Michael Hoffman, Alphaxed Loomis.

1843—66*th Session.*

John T. Hall, Walter Booth.

1844—67*th Session.*

Michael Hoffman, Peter H. Warren.

1845—68*th Session.*

William C. Crain, Alexander H. Buell.

1846—69*th Session.*

William C. Crain, Henry Eysaman.

1847—70*th Session.*

Abijah Beckwith, Jefferson Tillinghast.

1848—71*st Session.*

1. James Feeter, 2. Lawrence L. Merry.

1849—72*d Session.*

Frederic P. Bellinger, 2. Asa Wilcox.

1850—73*d Session.*

1. Asa Vickory, 2. Humphrey G. Root.

1851—74*th Session.*

1. John H. Wooster, 2. Daniel Shall.

1852—75*th Session.*

1. John Hoover, 2. Charles Delong.

JEFFERSON COUNTY.

1806—29*th Session.*

Henry Coffeen.

1807—30*th Session.*

Moss Kent.

1808—31*st Session.*

Lewis Graves.

1808-9—32*d Session.*

Corlis Hinds, David J. Andrews.

1810—33*d Session.*

Moss. Kent, Ethel Bronson.

1811—34*th Session.*

Corliss Hinds, ?

1812—35*th Session.*

John Durkee, David J. Andrus.

1812-13—36*th Session.*

Egbert Ten Eyck, Clark Allen.

1814—37*th Session.*

Ethel Bronson, Clark Allen

1814-15—38*th Session.*

Ethel Bronson.

1816—39*th Session.*

Amos Stebbins, Abel Cole.

1816-17—40*th Session.*

Abel Cole, Ebenezer Wood

1818—41*st Session.*

Abel Cole, Horatio Orvis.

1819—42*d Session.*

George Brown, Jr., John Cowles.

1820—43*d Session.*

Hiram Steele, Calvin McKnight.

1820-21—44*th Session.*

Amos Stebbins, Richard Goodell.

1822—45*th Session.*

George Andrus, John Esselstyne.

1823—46*th Session.*

Richard Goodell, Walter Cole,
Convers Johnson.

1824—47*th Session.*

Richard Goodell, John Stewart,
John Howe.

1825—48*th Session.*

Richard Goodell, George White,
John B. Esselstyn.

1826—49*th Session.*

Daniel Wardwell, David W. Bucklin,
Horatio Orvis.

1827—50*th Session.*

Daniel Wardwell, David W. Bucklin,
Alpheus S. Greene.

1828—51*st Session.*

David W. Bucklin, Daniel Wardwell,
Alpheus S. Greene.

1829—52*d Session.*

Jere Carrier, Titus Ives,
Fleury Keith.

1830—53*d Session.*

Aaron Brown, Curtis G. Brooks,
Charles Orvis.

1831—54*th Session.*

Walter Cole, Fleury Keith,
Joseph C. Budd.

1832—55*th Session.*

William H. Angel, Philip Maxwell,
Nathan Strong.

1833—56*th Session.*

William H. Angel, John Burch,
Jotham Ives.

1834—57*th Session.*

Calvin McKnight, William H. Angel,
Eli West.

1835—58*th Session.*

Charles Strong, Eli Farwell,
Calvin Clark.

1836—59*th Session.*

Lowrey Barney, Otis P. Starkey,
Richard Hulbert.

1837—60*th Session.*

Richard Hulbert, Jotham Bigelow,
John W. Tamblin.

1838—61*st Session.*

Daniel Wardwell, Richard Hulbert,
Charles B. Hoard.

1839—62*d Session.*

Charles E. Clarke, Calvin Clark,
Philip P. Gaige.

1840—63*d Session.*

Charles E. Clarke, Stephen Johnson,
Calvin Clark.

1841—64*th Session.*

William C. Pierrepont, Joseph Webb,
William McAllister.

1842—65*th Session.*

John W. Tamblin, Elihu C. Church,
Elihu M. McNeil.

1843—66*th Session.*

Elihu C. Church, Joseph Graves,
Job Lamson.

1844—67*th Session.*

Samuel Bond, William Carlisle,
Eli West.

1845—68*th Session.*

Edward S. Salisbury, Azel W. Danforth,
Lysander H. Brown.

1846—69*th Session.*

Levi Miller, Henderson Howk,
Elihu M. McNeil.

1847—70*th Session.*

John Boyden, John D. Davison,
Samuel J. Davis.

1848—71*st Session.*

1. Benjamin Maxson, 2. Harvey D. Parker,
3. Fleury Keith.

1849—72*d Session.*

1. George Gates, 2. John S. Marsh,
3. Bernard Bagley.

1850—73*d Session.*

1. John Winslow, 2. Joel Haworth,
3. Alfred Fox.

1851—74*th Session.*

1. William A. Gilbert, 2. John Pool, Jr.,
3. Lorin Bushnell.

1852—75*th Session.*

1. William A. Gilbert, 2. Merrill Coburn,
3. William Rouse.

KINGS COUNTY.

1777—1*st Session.*

William Boerum, Henry Williams.

1778—2*d Session.*

William Boerum.

1779—3d *Session.*

William Boerum, Henry Williams.

1780-81—4*th Session.*

(See note to Albany county.)

1781-2—5*th Session.*

William Boerum, Henry Williams.

1782-3—6*th Session.*

William Boerum, Henry Williams.

1784—7*th Session.*

John Vanderbilt, Charles Doughty.

1784-5—8*th Session.*

Johannis E. Lott, Rutger Van Brant.

1786—9*th Session.*

John Vanderbilt, Charles Doughty.

1787—10*th Session.*

Cornelius Wyckoff, Charles Doughty.

1788—11*th Session.*

Cornelius Wyckoff, Charles Doughty.

1788-9—12*th Session.*

Peter Vandervoort, Aquila Giles.

1789-90—13*th Session.*

Peter Vandervoort, Aquila Giles.

1791—14*th Session.*

Peter Vandervoort, Aquila Giles.

1792—15*th Session.*

Charles Doughty.

1792-93—16*th Session.*

Aquila Giles.

1794—17*th Session.*

Peter Vandervoort.

1795—18*th Session.*

Peter Vandervoort.

1796—19*th Session.*

Peter Vandervoort.

1797—20*th Session.*

Peter Vandervoort.

1798—21*st Session.*

Peter Vandervoort.

1798-99—22*d Session.*

Johanes I. Lott.

1800—23*d Session.*

Jacob Sharpe, jr.

1800-1—24*th Session.*

Jacob Sharpe, jr.

1802—25*th Session.*

John C. Vanderveer.

1803—26*th Session.*

John Hicks.

1804—27*th Session.*

John Hicks.

1804-5—28*th Session.*

John Hicks.

1806—29*th Session.*

John Hicks.

1807—30*th Session.*

John Hicks.

1808—31*st Session.*

John Hicks.

1808-9—32*d Session.*

Jeremiah Johnson.

1810—33*d Session.*

Jeremiah Johnson.

1811—34*th Session.*

John C. Vanderveer.

1812—35*th Session.*

John C. Vanderveer.

1812-13—36*th Session.*

John C. Vanderveer.

1814—37*th Session.*

Jeremiah Lott.

1814-15—38*th Session.*

Tunis Schenck.

1816—39*th Session.*

?

1816-17—40*th Session.*

?

1818—41*st Session.*

Cornelius Van Cleef.

1819—42*d Session.*

Tunis Schenck.

1820—43*d Session.*

Tunis Schenck.

1820-21—44*th Session.*

Jeremiah Lott.

1822—45*th Session.*

Jeremiah Lott.

1823—46*th Session.*

William Conselyea, jun.

1824—47*th Session.*

William Furman.

1825—48*th Session.*

William Furman.

1826—49*th Session.*

William Furman.

1827—50*th Session.*

Clarence D. Sacket.

1828—51*st Session.*

Clarence D. Sacket.

1829—52*d Session.*

John Wyckoff.

1830—53*d Session.*

Coe S. Downing.

1831—54*th Session.*

Coe S. Downing.

1832—55*th Session.*

Coe. S. Downing.

1833—56*th Session.*

Coe S. Downing.

1834—57*th Session.*

Philip Brasher.

1835—58*th Session.*

Philip Brasher.

1836—59*th Session.*

John Dikeman.

1837—60*th Session.*

Richard V. W. Thorne, Joseph Conselyea.

1838—61*st Session.*

Benjamin D. Silliman, Cornelius Bergen.

1839—62*d Session.*

Jeremiah Lott, Bergen.

1840—63*d Session.*

Jeremiah Johnson, Adrian Hegeman.

1841—64*th Session.*

Jeremiah Johnson, William Conselyea.

1842—65*th Session.*

John A. Lott, William M. Udall.

1843—66*th Session.*

William M. Udall, William Conselyea, jun.

1844—67*th Session.*

William Burbank, Jacob Rapelye.

1845—68*th Session.*

Richard S. Wyckoff, Daniel D. Bryant.

1846—69*th Session.*

Gamaliel King, John A. Voorhees.

1847—70*th Session.*

Abraham D. Soper, Ebenezer W. Peck,
John A. Emmons.

1848—71*st Session.*

1. Ebenezer W. Peck, 2. Edwards W. Fiske.
3. John A. Cross.

1849—72*d Session.*

1. Joseph Boughton, 2. Edwards W. Fiske,
3. John A. Cross.

1850—73*d Session.*

1. Joseph A. Yard, 2. Edwards W. Fiske,
3. John H. Baker.

1851—74*th Session.*

1. George E. Baker, 2. Howard C. Cady,
3. Edward T. Backhouse.

1852—75*th Session.*

1. John Berry, 2. Waldo Hutchins,
3. Samuel E. Johnson.

LEWIS COUNTY.

1808-9—32*d Session.*

Judah Barnes.

1810—33*d Session.*

Lewis Graves.

1811—34*th Session.*

Nathaniel Merriam.

1812—35*th Session.*

Wiliam Darrow.

1812-13—36*th Session.*

Levi Collins.

1814—37*th Session.*

Chillus Doty.

1814-15—38*th Session.*

Ela Collins.

1816—39*th Session.*

Chillus Doty.

1816-17—40*th Session.*

Chillus Doty.

1818—41*st Session.*

Levi Hart.

1819—42*d Session.*

Levi Robbins.

1820—43*d Session.*

Nathaniel J. Merriam.

1820-21—44*th Session.*

Stephen Hart.

1822—45*th Session.*

Chester Buck.

1823—46*th Session.*

Abner W. Spencer.

1824—47*th Session.*

Caleb Lyon.

1825—48*th Session.*

Amos Buck, jun.

1826—49*th Session.*

Amos Miller.

1827—50*th Session.*

John W. Martin.

1828—51*st Session.*

George D. Ruggles.

1829—52*d Session.*

George D. Ruggles.

1830—53*d Session.*

Joseph O. Mott.

1831—54*th Session.*

Harison Blodget.

1832—55*th Session.*

Andrew W. Doig.

1833—56*th Session.*

Eli Rogers, jun.

1834—57*th Session.*

George D. Ruggles.

1835—58*th Session.*

Charles Dayan.

1836—59*th Session.*

Charles Dayan.

1837—60*th Session.*

George D. Ruggles.

1838—61*st Session.*

William Dominick.

1839—62*d Session.*

Sanford Coe.

1840—63*d Session.*

Chester Buck.

1841 64*th Session.*

Eliphalet Sears.

1842—65*th Session.*

Carlos P. Scovil.

1843—66*th Session.*

Amos Buck.

1844—67*th Session.*

Alburn Foster.

1845—68*th Session.*

Dean S. Howard.

1846—69th Session.

Nelson J. Beach.

1847—70th Session.

Thomas Baker.

1848—71st Session.

David D. Reamer.

1849—72d Session.

Diodate Pease.

1850—73d Session.

John Newkirk.

1851—74th Session.

Caleb Lyon.

1852—75th Session.

John Benedict.

LIVINGSTON COUNTY.

1822—45th Session.

George Smith.

1823—46th Session.

William Janes, Matthew Warner.

1824—47th Session.

George Hosmer, George Smith.

1825—48th Session.

Robert McKay, James Faulkner.

1826—49th Session.

William H. Spencer, James Faulkner.

1827—50th Session.

William H. Spencer, Felix Tracy.

1828—51*st Session.*

Calvin H. Bryan, William Janes.

1829—52*d Session.*

Philo C. Fuller, Titus Goodman, Jr.

1830—53*d Session.*

Philo C. Fuller, Titus Goodman, Jr.

1831—54*th Session.*

Jerediah Horsford, James Percival.

1832—55*th Session.*

John Young, George W. Patterson.

1833—56*th Session.*

George W. Patterson, Samuel W. Smith.

1834—57*th Session.*

Tabor Ward, Salmon G. Grover.

1835—58*th Session.*

George W. Patterson, Hollom Hutchinson.

1836—59*th Session.*

Charles H. Carroll, George W. Patterson.

1837—60*th Session.*

George W. Patterson, William Scott.

1838—61*st Session.*

George W. Patterson, William Scott.

1839—62*d Session.*

George W. Patterson, Elias Clarke.

1840—63*d Session.*

George W. Patterson, Elias Clarke.

1841—64*th Session.*

Augustus Gibbs, Reuben P. Wisner.

1842—65*th Session.*

Chester Bradley, Gardner Arnold.

1843—56*th Session.*

Daniel H. Fitzhugh, Daniel D. Spencer.

1844—67*th Session.*

Gardner Arnold, Daniel D. Spencer.

1845—68*th Session.*

John Young, Harlow W. Wells.

1846—69*th Session.*

John Young, William S. Fullerton.

1847—70*th Second.*

William S. Fullerton, Andrew Sill.

1848—71*st Session.*

1. Gurdon Nowlan, 2. Nathaniel Coe.

1849—72*d Session.*

1. Archibald H. McLean, 2. Philip Woodruff

1850—73*d Session.*

1. Alexander H. McLean, 2. Philip Woodruff.

1851—74*th Session.*

1. Alvin Chamberlain, 2. Orrin D. Lake.

1852—75*th Session.*

1. Alvin Chamberlain, 2. Orrin D. Lake.

MADISON COUNTY.

1807—30*th Session.*

Sylvanus Smalley, Erastus Cleveland.

1808—31*st Session.*

Sylvanus Smalley, John W. Bulkley.

1808-9—32*d* *Session.*

John W. Bulkley, David Van Horne,
Oliver Brown.

1810—33*d* *Session.*

John W. Bulkley, Amos B. Fuller,
Daniel Van Horne.

1811—34*th* *Session.*

Zebulon Douglass, John W. Bulkley,
Henry Clark, jun.

1812—35*th* *Session.*

Bennet Bicknell, Samuel H. Coon,
Nathaniel Cole.

1812-13—36*th* *Session.*

Jonathan Olmstead, Walter Beecher,
John D. Henry.

1814—37*th* *Session.*

Elisha Carrington, Stephen F. Blackstone,
Abraham D. Van Horne.

1814-15—38*th* *Session.*

David Beecher, John Matteson,
Windsor Coman.

1816—39*th* *Session.*

Oliver Brown, Eliphalet S. Jackson,
Nathan Hall.

1816-17—40*th* *Session.*

Tunis B. Eldridge, Moses Maynard,
Jonathan Olmsted.

1818—41*st* *Session.*

David Woods, Thomas Greenly,
James Nye.

1819—42*d* *Session.*

Thomas Greenly, Denison Palmer,
Solomon Beebe.

1820—43*d* *Session.*

Eliphalet S. Jackson, Amos Crocker,
Levi Morton.

1820-21—44*th* *Session.*

Justus Dwinell, William Berry, jun.,
Herman Van Vleck.

1822—45*th* *Session.*

Justus Dwinell, Pardon Barnard,
Henry Clark, jun.

1823—46*th* *Session.*

Rutherford Barker, Curtis Hoppin,
Daniel M. Gillett.

1824—47*th* *Session.*

Edward Hudson, Peter Price,
Thomas Spencer.

1825—48*th* *Session.*

Nehemiah Huntington, Elias P. Benjamin,
James Nye.

1826—49*th* *Session.*

Nehemiah Huntington, Jacob Ten Eyck,
Thomas Dibble.

1827—50*th* *Session.*

James B. Eldredge, Lemuel White,
Sylvester Beecher.

1828—51*st* *Session.*

John Knowles, Joseph Clark,
Eri Richardson.

1829—52*d* *Session.*

James B. Eldredge, John Williams,
William K. Fuller,

1830—53*d* *Session.*

William K. Fuller, John M. Messenger,
William Manchester.

1831—54*th* *Session.*

Robert Henry, Stephen B. Hoffman,
John Whitman.

1832—55*th* *Session.*

Nehemiah Batcheler, John Head, 2d.,
Daniel M. Gillet.

1833—56*th* *Session.*

Erastus Cleaveland, Jesse Kilborn,
John Davis.

1834—57*th* *Session.*

Benjamin Enos, Henry T. Sumner,
Sardis Dana.

1835—58*th* *Session.*

Joseph Clark, William J. Hough,
Jason W. Powers.

1836—59*th* *Session.*

John B. Yates, William J. Hough,
Ephraim Gray.

1837—60*th* *Session.*

Silas Sayles, Wait Clark,
Isaac Coe, jun.

1838—61*st* *Session.*

William T. Bostwick, William Lord,
Onesimus Mead.

1839—62*d* *Session.*

Friend Barnard, Uriah Leland,
Benjamin Enos.

1840—63*d Session.*

Daniel Dickey, Daniel Barker,
Benjamin Enos.

1841—64*th Session.*

Seneca B. Burchard, Daniel Van Vleck,
Oliver Pool.

1842—65*th Session.*

Simon C. Hitchcock, Calvin Morse,
Job Wells.

1843—66*th Session.*

Venoni W. Mason, Lorenzo Sherwood,
Henry Palmer.

1844—67*th Session.*

Thomas Keith, Alfred Medbury,
Ralph I. Gates.

1845—68*th Session.*

Stephen G. Sears, William Smith,
John I. Walrath.

1846—69*th Session.*

Thomas T. Loomis, Horace Hawks,
Stephen M. Potter.

1847—70*th Session.*

Peter Van Valkenburgh, George F. Taylor.

1848—71*st Session.*

1. John T. G. Bailey. 2. George Grant.

1849—72*d Session.*

1. David Maine. 2. Robert G. Stewart.

1850—73*d Session.*

1. John Clark. 2. Thomas O. Bishop.

1851—74*th Session.*

1. Jairus French. 2. Franklin B. Hoppin.

1852—75*th Session.*

1. George B. Rowe. 2. Henry L. Webb.

MONROE COUNTY.

1822—45*th Session.*

Nathaniel Rochester.

1823—46*th Session.*

John Bowman, Simon Stone, 2d.,
Samuel B. Bradley.

1824—47*th Session.*

Enos Stone, Joseph Clark,
Major H. Smith.

1825—48*th Session.*

Henry Fellows, Gustavus Clark,
Thurlow Weed.

1826—49*th Session.*

Vincent Mathews, Isaac Lacy,
Henry Fellows.

1827—50*th Session.*

Abelard Reynolds, Joseph Sibley,
Peter Price.

1828—51*st Session.*

Timothy Childs, Francis Storm,
Ezra Sheldon, Jr.

1829—52*d Session.*

Heman Norton, John Garbutt,
Reuben Willey.

1830—53*d Session.*

Ezra Sheldon, jr., Joseph Randall,
Thurlow Weed.

1831—54*th Session.*

Samuel G. Andrews, Peter Price,
Isaac Lacey.

1832—55*th Session.*

Samuel G. Andrews, William B. Brown,
Ira Bellows.

1833—56*th Session.*

Timothy Childs, Levi Pond,
Milton Sheldon.

1834—57*th Session.*

Fletcher M. Haight, Elihu Church,
Jeremy S. Stone.

1835—58*th Session.*

Derick Sibley, Enoch Strong,
George Brown.

1836—59*th Session.*

Horace Gay, Micajah W. Kirby,
Joseph Sibley.

1837—60*th Session.*

Derick Sibley, Levi Russell,
Silas Walker.

1838—61*st Session.*

Derick Sibley, Ezra Sheldon, jr.,
John P. Patterson.

1839—62*d Session.*

William S. Bishop, Henry P. Norton,
John P. Stull.

1840—63*d* Session.

Derick Sibley,
George Brown,
Enoch Strong.

1841—64*th* Session.

Enoch Strong,
Alexander Kelsey,
Lucius Lilley.

1842—65*th* Session.

George S. Stone,
Henry P. Higgins,
Frederick Starr.

1843—66*th* Session.

Jerome Fuller,
Enoch Strong,
Robert Haight.

1844—67*th* Session.

Moses Sperry,
Ashley Sampson,
Edward Wadhams.

1845—68*th* Session.

John McVean,
Isaac T. Raymond,
William C. Bloss.

1846—69*th* Session.

William C. Bloss,
James R. Thompson,
Mathias L. Angle.

1847—70*th* Session.

William C. Bloss,
John B. Smith,
John McGonegal.

1848—71*st* Session.

1. Ezra Sheldon,
2. Abm. M. Schermerhorn,
3. Isaac Chase, jr.

1849—72*d* Session.

1. Levi Kelsey,
2. L. Ward Smith
3. Elisha Harmon.

1850—73*d Session.*

1. M. Day Hicks,
2. L. Ward Smith,
3. Elisha Harmon.

1851—74*th Session.*

1. Nathaniel H. Fordyce,
2. William A. Fitzhugh,
3. Caleb B. Corser.

1852—75*th Session.*

1. John Shoecraft,
2. Joel P. Milliner,
3. Caleb B. Corser.

TRYON COUNTY.

1777—1*st Session.*

Michael Edie,
Samuel Clyde,
Abraham Van Horne,
Jacob Snell,
Johannes Veeder,
Jacob G. Klock.

1778—2*d Session.*

Abraham Van Horne,
John Newkirk,
Peter Waggoner, Jr.,
George Henry Bell.

1779—3*d Session.*

Peter Waggoner, Jr.
Jacob Gardineer,
Abraham Copeman,
Peter S. Deygart,
Melkert Van Duzen,
Frederick Fox.

1780-81—4*th Session.*

(See note to Albany county.)

1781-82—5*th Session.*

Zephania Batchelor,
John Moore,
William Harper,
William Petrie,
Abraham Garrison,
Isaac Merselis.

1782-83—6*th Session.*

John Frey,
William Petry,
Andrew Finch, Jr.,
Zephaniah Batchelor,
Christian Nellis,
Frederick Fischer.

1784—*7th Session.*

William Harper,
Volkert Veeder,
Isaac Paris,
Christopher P. Yates,
Abrahm Copeman,
James Livingston.

MONTGOMERY COUNTY.

1784-5—*8th Session.*

Christopher P. Yates,
James Livingston,
William Harper,
Isaac Paris,
Volkert Veeder,
Frederic C. Fox.

1786—*9th Session.*

Volkert Veeder,
Abraham Van Horne,
John Frey,
James Livingston,
Abraham Arndt,
William Harper.

1787—*10th Session.*

John Frey,
James Livingston,
James Cannan,
Josiah Crane,
William Harper,
Zephaniah Batcheler.

1788—*11th Session.*

James Livingston,
John Winn,
Volkert Veeder,
John Frey,
Isaac Paris,
Abraham Arndt.

1788-9—*12th Session.*

William Harper,
Christopher P. Yates,
John Winn,
John Frey,
Volkert Veeder,
Henry Stauring.

1789-90—*13th Session.*

Volkert Veeder,
David McMaster,
James Livingston,
Josiah Crane,
Abraham Arndt,
Michael Myers.

1791—14th *Session.*

James Livingston,
Abraham Arndt,
John T. Visscher,
Josiah Crane,
Michael Myers,
John Frey.

1792—15th *Session.*

John Frey,
Silas Talbot,
David McMaster,
Douw Fonda.

1792-3—16th *Session.*

Silas Talbot,
Simon Veeder,
David McMaster,
Jacob Eaker.

17941—7th *Session.*

Frederick Gettman,
Simon Veeder,
Jacob Eaker,
John McArthur.

1795—18th *Session.*

Simon Veeder,
Douw Fonda,
David McMaster,
Frederick Gettman.

1796—19th *Session.*

Daniel Miles,
Lewis Dubois,
David Cady,
Frederick Gettman.

1797—20th *Session.*

Simon Veeder,
Jacob Eaker,
Peter V. Veeder,
John C. Van Epps,
George Metcalfe,
Frederick Gettman.

1798—21st *Session.*

George Metcalfe,
James Hildreth,
Robert McFarlan,
Jacob Snell,
Frederick Gettman,
Philip Van Alstyne.

1798-99—22nd *Session.*

Jacob Snell,
Peter Voorhis,
Henry Pawling,
Stephen Reynolds,
Archibald McIntyre,
Simon Veeder.

1800—23*rd Session.*

Cornelius Humprey,
Frederick Sammons,
Jacob Snell,
Simon Veeder,
Archibald McIntyre,
John Herkemer.

1800-01—24*th Session.*

Cornelius Humprey,
Archibald McIntyre,
Jacob Snell,
Simon Veeder,
Christopher P. Yates,
Alexander Sheldon.

1802—25*th Session.*

Archibald McIntyre,
Frederick Sammons,
Jacob Snell,
Charles Ward,
Christopher P. Yates
Alexander Sheldon.

1803—26*th Session.*

Alexander Sheldon,
Daniel Walker,
Charles Ward,
Henry Kennedy,
John Roof.

1804—27*th Session.*

Alexander Sheldon,
John Herkimer,
David J. Zeilly,
Henry Kennedy,
Archibald McIntyre.

1804-5—28*th Session.*

John Leeber,
Alexander Sheldon,
David J. Zielley,
James McIntyre,
Jonathan Hallett.

1806—29*th Session.*

Joseph Wagoner,
Alexander Sheldon,
John Herkimer,
James McIntyre,
Samuel Jackson,

1807—30*th Session.*

James Lansing,
Alexander Sheldon,
Lawrence Gross,
William Vanolinda,
Harmanus A. Vedder.

1808—31*st Session.*

Alexander Sheldon,
Lawrence Gross,
Henry Fonda,
Peter C. Fox,
Harmanus A. Vedder.

1808-9—32*d Session.*

John Fay,
John Green,
Daniel Cady,
Richard Van Horne,
David J. Zielly.

1810—33*d Session.*

Richard Van Horne,
John Green,
Daniel Cady,
James Allen,
David J. Zeilly.

1811—34*th Session.*

James McIntyre,
George H. Nellis,
Daniel Cady,
Jacob Eacker,
Daniel Hurlbut.

1812—35*th Session.*

Alexander Sheldon,
Daniel Hurlbut,
John Fay,
George H Nellis,
Archibald McIntyre.

1812-13—36*th Session.*

Daniel Cady,
Richard Van Horne,
Daniel McVean,
Josiah Bartlett,
Simon Maybie.

1814—37*th Session.*

Andrew Zobriskie,
James Knox,
Samuel A. Gilbert,
Sylvanus Wilcox,
Gabriel Murray,

1814-15—38*th Session.*

Alvah Southworth,
John Shuler,
Solomon Deifendorf,
Alexander St John,
John Eisenlord.

1816—39*th Session.*

Nathan Christie,
Nathan Kimball,
William Woodward,
Edmund G. Rawson,
Richard Van Horne,

1816-17—40*th Session.*

Henry Fonda,
Samuel Jackson,
Benedict Arnold,
Henry Gros,
Isaac Sears.

1818—41*st Session.*

Samuel Jackson,
Jacob Shew,
Barent H. Vroman,
Henry Syker,
Ezekiel Belding.

1819—42*d Session.*

Samuel Jackson,
Robert Hall,
Jacob Hees,
Aaron Haring,
Duncan McMartin, jr.

1820—43*d Session.*

Henry J. Deifendorf,
John T. Francisco,
Lawrence Gross,
Henry Fonda,
Jacob Hees.

1820-21—44*th Session.*

David W. Candee,
Lawrence Gross,
Howland Fish,
Archibald McIntyre,
Henry Failing.

1822—45*th Session.*

James McIntyre,
Nicholas Gross,
Henry Valentine,
John W. Cady,
Joshua Webster.

1823—46*th Session.*

George D. Ferguson,
Alvin Harris,
Joseph Spier.
Christian Klock.

1824—47*th Session.*

Henry Cunningham, Peter Smith,
Francis H. Van Beuren, Peter C. Fox.

1825—48*th Session.*

Peter Smith, Alexander St. John,
Henry Cunningham, Samuel Jackson.

1826—49*th Session.*

Abraham A Van Horne, John French,
Augustus Deiffendorf, Alexander Sheldon,

1827—50*th Session.*

Lawrence Gros, Nathaniel Wescot,
Howland Fish.

1828—51*st Session.*

Nathaniel Wescot, Daniel F. Sacia,
John S. Veeder.

1829—52*d Session.*

Phineas Randall, Joseph Spier,
Peter Young.

1830— 53*d Session.*

Henry J. Deifendorf, Daniel Stewart,
Thomas R. Benedict.

1831—54*th Session.*

William Rob, Platt Potter,
Josiah P. Brown.

1832—55*th Session.*

Peter Wood, Silas Philips,
Jacob Van Arnum.

1833—56*th Session.*

Douw A. Fonda, William Carlisle,
Cornelius Mabee.

1834—57*th Session.*

Daniel Morrell, Clark S. Grinell,
Azel Hough.

1835—58*th Session.*

Henry Adams, Collins Odell,
Ashbel Loomis.

1836—59*th Session.*

Joseph Blair, Henry V. Berry,
Jacob Johnson.

1837—60*th Session.*

Joseph Blair, Jacob Hees,
Richard Peck.

1838—61*st Session.*

Marcellus Weston, Abraham V. Putman,
Jeremiah Nellis.

1839—62*d Session.*

Isaac Jackson, Isaac S. Frost.

1840—63*d Session.*

Peter Woods, John S. Veeder.

1841—64*th Session.*

Reuben Howe, Daniel T. Nellis.

1842—65*th Session.*

Lawrence Marcellus, James Diefendorff.

1843—66*th Session.*

John Bowdish, John I. Zoller.

1844—67*th Session.*

Clark B. Cochrane, Morgan L. Harris.

1845—68*th Session.*

Peter H. Fonda, John L. Bevens.

1846—69*th Session.*

Theodoric R. Liddle,
Benjamin Baird.

1847—70*th Session.*

Gamaliel Bowdish,
Andrew S. Gray.

1848—71*st Session.*

1. Asa Bowman,
2. William A. Haslett.

1849—72*d Session.*

1. Frothingham Fish,
2. Lewis Averill.

1850—73*d Session.*

1. Samuel G. Green,
2. Charles Hubbs.

1851—74*th Session.*

1. S. Pulver Heath,
2. Conrad P. Snell.

1852—75*th Session.*

1. John I. Davis,
2. William Clark.

NEW-YORK.

1777—1*st Session.*

Abraham Brasher,
Daniel Dunscomb,
Evert Bancker,
Jacobus Van Zandt,
Frederick Jay,
Peter P. Van Zandt,
Robert Harpur,
Abraham P. Lott,
Henry Rutgers, jr.

1778—2*d Session.*

Evert Bancker,
Frederick Jay,
Daniel Dunscomb,
Robert Harpur.

1779—3*d Session.*

Abraham Brasher,
Daniel Dunscomb,
Evert Bancker,
Peter P. Van Zandt,
Robert Harpur,
Abraham P. Lott,
Jacobus Van Zandt,
Frederick Jay,
John Berrien.

1780-81—*4th Session.*

The journal of the first meeting of this session is lost, and the names of the representatives are not to be found either in the State Library, or in the office of the Secretary of State.

1781-82—*5th Session.*

Abraham Brasher,
Daniel Dunscomb,
Evert Bancker,
Peter P. Van Zandt,
Robert Harpur,
Abraham P. Lott,
Jacobus Van Zandt,
Frederick Jay,
John Berrien.

1782-83—*6th Session.*

Abraham Brasher,
Daniel Dunscomb,
Evert Bancker,
Peter P. Van Zandt,
Abraham P. Lott,
Jacobus Van Zandt,
Frederick Jay,
John Berrien,
Robert Harpur.

1783-84—*7th Session.*

Marrinus Willett,
John Lamb,
Henry Rutgers,
Isaac Sears,
John Stagg,
William Malcom,
Robert Harpur,
Peter P. Van Zandt,
Hugh Hues.

1784-85—*8th Session.*

William Goforth,
Henry Remsen,
Peter V. B. Livingston,
Daniel Dunscomb,
Comfort Sands,
William Denning,
John Lawrence,
Thomas Randall,
Aaron Burr.

1785-86—*9th Session.*

John Stagg,
William Denning,
William Malcom,
William Goforth,
Robert Troup,
William Duer,
Robert Boyd,
Evert Bancker,
Isaac Sears.

1786-87—10*th Session.*

Robert C. Livingston.
William Malcom,
Richard Varick,
Alexander Hamilton,
Nicholas Bayard,
John Ray,
Evert Bancker,
William Denning,
David Brooks.

1788—11*th Session.*

David Brooks,
Richard Varick,
Richard Harison,
Comfort Sands,
Nicholas Bayard,
Gulian Ver Planck,
Nicholas Low,
Daniel Niven,
Evert Bancker.

1788-89—12*th Session.*

Richard Harison,
William W. Gilbert,
Brockholst Livingston,
Nicholas Low,
Alexander Macomb,
Nicholas Hoffman,
John Watts, jr.,
Gulian Ver Planck,
Comfort Sands.

1789-90—13*th Session.*

Gulian Verplanck,
John Watts,
Rufus King,
Mathew Clarkson,
Henry Will,
Robert R. Randall,
Morgan Lewis,
Anthony Post,
Francis Childs.

1791—14*th Session.*

John Watts,
Nicholas Cruger,
William W. Gilbert,
Josiah Ogden Hoffman,
Henry Will,
Alexander Macomb,
James Watson,
John Pintard,
Cornelius J. Bogert.

1792—15*th Session.*

John Watts,
William S. Livingston,
John Willy,
Josiah Ogden Hoffman,
William Pitt Smith,
Henry Will,
Melancton Smith.

1792-93—16*th Session.*

John Watts,
William S. Livingston;
John De Lancey,
John Wylley,
Josiah Ogden Hoffman.
William W. Gilbert,
William Cock.

1794—17*th Session.*

Jotham Post,
John Delancy,
William Willcocks,
Josiah Ogden Hoffman,
James Watson,
Robert Boyd,
Richard Furman.

1795—18*th Session.*

Richard Furman,
Jotham Post,
James Watson,
Josiah Ogden Hoffman,
John Delancey,
James M.Hughes,
Nicholas Cruger.

1796—19*th Session.*

Jotham Post,
Gabriel Furman,
James Watson,
Alexander Lamb,
Wililam P. Smith,
Jacob Morton,
Richard Furman.

1796-97—20*th Session.*

Gulian Verplanck,
Jotham Post,
Leonard Bleecker,
Herman Leroy,
James Kent,
Jacob Morton,
Josiah Ogden Hoffman,
James Roosevelt,
James Tylee,
Jonathan Little,
Richard Furman.
Alexander Lamb,
Henry Will.

1798—21*st Session.*

Thomas Storm,
Aaron Burr,
William Denning,
De Witt Clinton,
Jacob De la Montagnie,
Ezekiel Robins,
William Boyd,
Philip J. Arcularius,
George Warner,
Samuel L. Mitchell,
James Fairlie,
Ebenezer S. Burling,
James Hunt.

1798–99—22*d Session.*

Thomas Storm,
Aaron Burr,
James Fairlie,
James Hunt,
Philip J. Arcularius,
John B. Prevost,
Richard Furman,
Ezekiel Robins,
Elias Nexsen,
John Swartwout,
Ebenezer S. Burling,
William Boyd,
John A. Wolfe.

1800—23*d Session.*

John Othout,
Samuel Stillwell,
William W. Woolsey,
John Bogert,
Bernardus Swartwout, Jr.,
Anthony Post,
Ebenezer Stevens,
Selah Strong,
Anthony Steenback,
Robert Rutgers,
Jacob Sherred,
Nicholas Evertson.
Caleb S. Riggs.

1800–1801—24*th Session.*

George Clinton,
John Broome,
Thomas Storm,
George Warner,
Horatio Gates,
Samuel Osgood,
Elias Nexsen,
John Swartwout,
Brockholst Livingston,
Ezekiel Robins,
James Hunt,
Philip J. Arcularius,
Henry Rutgers.

1802—25*th Session.*

John Broome,
Henry Rutgers
Samuel Osgood,
Brockholst Livingston,
George Warner,
Elias Nexsen,
Thomas Storm,
Philip J. Arcularius,
James Hunt,
William Few,
Thomas Farmer,
Peter Elting.
Ezekiel Robins.

1803—26*th Session.*

William Few,
Cornelius C. Rosevelt,
Thomas Storm,
Ezekiel Robins,
William W. Gilbert,
Peter Irving,
John Brower,
John Burger,
Daniel D. Tompkins.

1804—27*th Session.*

Henry Rutgers,
Solomon Townsend,
George Clinton, Jr.,
James Warner,
Peter H. Wendover,
Peter A. Schenck,
Samuel Bradhurst,
Peter Cartenius,
William Few.

1804-5—28*th Session.*

Henry Rutgers,
William Few,
Solomon Townsend,
George Clinton, Jr.,
Wm. W. Gilbert.
Philip J Arcularius,
John Bingham,
Thomas Farmer.
Peter A. Schenck.

1806—29*th Session.*

William W. Gilbert,
Peter A. Schenck,
Clarkson Crolius,
Samuel Russell,
Arthur Smith,
Richard Riker,
James Warner,
Francis Cooper,
Benjamin Ferris.

1807—30*th Session.*

Henry Rutgers,
Arthur Smith,
James Warner,
Benjamin Ferris,
Samuel Russell,
John Bingham,
William W. Gilbert,
Clarkson Crolius,
Francis Cooper.

1808—31*st Session.*

Henry Rutgers,
William W. Gilbert,
Thomas Farmer,
Benjamin Ferris,
Solomon Townsend,
Francis Cooper,
James Warner,
Augustus Wright,
Silvanus Miller.

1809—32*d Session.*

Thomas Farmer,
Arthur Smith,
Solomon Townsend,
Francis Cooper,
Joseph Constant,
Beekman M. Van Buren,
Frederick Jenkins,
John P. Anthony,
Nathan Sanford,
James Fairlie,
Caleb Pell.

1810—33*d Session.*

Thomas Farmer,
Augustus Wright,
Solomon Townsend,
Samuel L. Mitchell,
Abraham E. Brouwer,
Samuel Tooker,
John P. Anthony,
Ichabod Prall,
B. M. Van Buren,
Adrian Hegeman,
Caleb Pell.

1811—34*th Session.*

Isaac Sebring,
John Vanderbilt, Jr.,
Robert Bogardus,
Jonas Mapes,
Thomas R. Mercein,
Thomas Carpenter,
Thomas Farmer,
Solomon Townsend,
Nathan Sanford,
John Gelston,
Samuel Lawrence.

1812—35*th Session.*

Thomas Carpenter,
Thomas R. Mercein,
Samuel Jones, Jr.,
Isaac S. Douglass,
Peter W. Radcliff,
Jacob Lorillard,
James Heard,
James Tylee,
James Smith,
Isaac Sebring,
Abraham Russell.

1812-13—36*th Session.*

Thomas Carpenter,
Samuel Jones, Jr.,
Isaac S. Douglass,
Josiah Ogden Hoffman,
Abraham Russell,
James Smith,
Isaac Sebring,
Jameson Cox,
Richard Hatfield, Jr.,
William Henderson,
Jacob Lorillard.

1814—37*th Session.*

John B. Coles,
Samuel Jones, Jr.,
Richard Hatfield,
Isaac S. Douglass,
Elisha W. King,
James Palmer,
Charles King,
Abraham Russel,
David B. Ogden,
James Smith,
Gabriel Furman.

1814-15—38*th Session.*

George Warner,
Francis Cooper,
Joseph Smith,
Ogden Edwards,
Peter Stagg,
Jacob Drake,
Peter Sharpe,
Samuel Forbert,
Charles Baldwin,
Augustus Wright,
Isaac Pierson.

1816—39*th Session.*

Joseph Bayley,
Philip Brasher,
Peter A. Jay,
Edward W. Laight,
Andrew Morris,
Joseph Smith,
Thomas C. Taylor,
George Warner,
Samuel Whitemore,
Augustus Wynkoop,
James Palmer.

1816-17—40*th Session.*

Clarkson Crolius,
Cornelius Heeney,
John T. Troing,
Samuel B. Romayne,
Peter Sharpe,
Henry Eckford,
John S. Lawrence,
Asa Mann,
Samuel Russell,
Joseph Smith,
George Warner.

1818—41*st Session.*

Peter Sharpe,
Michael Ulschoeffer,
Samuel Tooker,
Ogden Edwards,
Isaac Pierson,
Henry Meigs,
Robert R. Hunter,
Cadwallader D. Colden,
Cornelius Heeney,
Clarkson Crolius,
John Morss.

1819—42*d Session.*

Peter Sharpe,
Michael Ulschoeffer,
Robert R. Hunter,
Samuel B. Romaine,
Cornelius Heeney,
John T. Irving,
John I. Morgan,
Samuel Watkins,
Alexander Hamilton,
Richard Hatfield,
Clarkson Crolius.

1820—43*d Session.*

Peter Sharpe,
Michael Ulschoeffer,
Cornelius Henry,
Samuel B. Romaine,
Clarkson Crolius,
Jacob Drake,
Richard Hatfield,
Reuben Munson,
Samuel Watkins,
John T. Irving,
Robert R. Hunter.

1820-21—44*th Session.*

Peter Sharpe,
Gulian C. Verplanck,
John Swartwout,
William A. Davis,
Michael Ulschoeffer,
Richard Hatfield,
Robert R. Hunter,
Reuben Munson,
Clarkson Crolius,
Cornelius Heeney,
Samuel B. Romaine.

1822—45*th Session.*

Michael Ulshoeffer,
Jeromus Johnson,
John Morss,
Samuel B. Romaine,
George Buckmaster,
Gulian C. Verplanck,
Cornelius Heeney,
Clarkson Crolius,
Junius H. Hatch,
Philip Brasher,
Reuben Munson.

1823—46*th Session.*

Gulian C. Verplanck,
John L. Broome,
Samuel S. Gardiner,
John Morss,
Philip Brasher,
Jesse Hoyt,
Gideon Lee,
William A. Thompson,
John Rathbone, jun.
Thomas Hyatt.

1824—47*th Session.*

John Morss,
Thomas Hyatt,
David Seaman,
Samuel S. Gardiner,
Jacob Drake,
James Benedict,
Isaac Pierson,
Charles Town,
Henry Wheaton,
Clarkson Crolius.

1825—48*th Session.*

David Seaman,
James Benedict,
George Zabriskie,
John Morss,
Jonathan E. Robinson,
Samuel L. Gouverneur,
Clarkson Crolius,
Ira B. Wheeler,
Gilbert Coutant,
Maltby Gelston,

1826—49*th Session.*

Maltby Gelston,
Jonathan E. Robinson,
Stephen Allen,
James Hall,
Francis Cooper,
Philip Brasher,
Isaac Minard,
William A. Thompson,
Alpheus Sherman,
Elisha W. King.

1827—50*th Session.*

Gilbert Coutant,
Thomas R. Smith,
Charles Town,
Jonathan E. Robinson,
Isaac Minard,
Philip Brasher,
Alpheus Sherman,
Jonathan I. Coddington,
Lemuel Smith,
Abraham Cargill.
Joseph Pigot.

1828—51*st Session.*

Saul Alley,
Alpheus Sherman,
Abraham Cargill,
Lemuel Smith,
Shivers Parker,
Isaac Dyckman,
Philip Brasher,
William Alburtis,
Robert Emmet,
Asa Mann,
Ogden Hoffman.

1829—52*d Session.*

Abraham Cargill,
Charles L. Livingston,
Jacob S. Bogert,
Mordecai Myers,
Aaron O. Dayton,
William Alburtis,
Jacob G. Dyckman,
Thomas L. Smith,
John Van Beuren,
Peter S. Titus,
Nathan T. Arnold.

1830—53*d Session.*

Cnarles L. Livingston,
Peter S. Titus,
Gideon Ostrander,
Abrabam Cargill,
Jacob S. Bogert,
Dennis McCarthy,
George Curtis,
Silas M. Stilwell,
Gideon Tucker,
Ebenezer Ford,
John Van Beuren.

1831—54*th Session.*

James Morgan,
Silas M. Stilwell,
Dudley Selden,
Charles L. Livingston,
Gideon Ostrander,
Nathaniel Jarvis,
Isaac L. Varian,
Jacob S. Bogert,
Mordecai Myers,
Dennis McCarthy,
Abraham Cargill.

1832—55*th Session.*

Silas M. Stilwell,
Philip E. Milledoler,
Mordecai Myers,
Myndert Van Schaick,
Charles L. Livingston,
Judah Hammond,
Gideon Ostrander,
Isaac L. Varian,
John McKeon,
Nathan T. Arnold,
James Morgan,

1833—56*th Session.*

Charles L. Livingston,
Gideon Ostrander,
John McKeon,
Thomas Hertell,
Robert H. Morris,
Richard Cromwell,
Benjamin Ringgold,
Isaac L. Varian,
Mordecai Myers,
Silas M. Stillwell,
Minthorne Tompkins.

1834—57*th Session.*

Abraham Cargill,
John McKeon,
Robert H. Morris,
John W. Degrauw,
Benjamin Ringgold,
Mordecai Myers,
Thomas Hertell,
Henry Hone,
Daniel Dusenbury,
Peter S. Titus,
Minthorne Tompkins,

1835—58*th Session.*

Benjamin Ringgold,
Andrew C. Wheeler,
James J. Roosevelt, jun.
Charles Henry Hall,
Charles P. Clinch,
Job Haskell,
Thomas N. Carr,
Christopher C. Rice,
Herman J. Quackenboss,
Thomas Hertell,
Prosper M. Wetmore.

1836—59*th Session.*

John I. Morgan,
Benjamin Ringgold,
Prosper M. Wetmore,
Charles P. Clinch,
Thomas Hertell,
George Seaman,
Ezra S. Conner,
Jesse West,
Peter A. Cowdrey,
George Sharp,
Francis B. Cutting.

1837—60*th Session.*

Clinton Roosevelt,
Robert Townsend, jr.,
Francis B. Cutting,
Thomas W. Tucker,
Charles P. Clinch,
George Zabriskie,
Thomas G. Tallmadge,
Henry Andrew,
John J. Labagh,
Anson Willis,
James J. M. Valentine,
Morris Franklin,
Thomas Hertell.

1838—61*st Session.*

David B. Ogden,
John I. Labagh,
George Zabriskie,
Adoniram Chandler,
Willis Hall,
Alfred Carhart,
Garret H. Stryker,
Evan Griffith,
William Harsell,
Heman W. Childs,
Anson Willis,
Samuel B. Ruggles.
John B. Scoles.

1839—62*d Session.*

George Zabriskie,
John B. Scoles,
Heman W. Childs,
Loring D. Chapin,
Frederick Pentz,
John J. Labagh,
Noah Cook,
Alfred Carhart,
George W. Bruen,
Thomas J. Doyle,
Thomas McElrath,
Samuel T. McKinney,
Stephen Potter.

1840—63d *Session.*

William B. Maclay,
Thomas Spofford,
Edmund J. Porter,
James J. Rosevelt, jun.,
Solomon Townsend,
Ulysses D. French,
Norman Hickok,
John J. Morgan,
George Weir,
Paul Grout,
Francis W. Lasak,
Thomas Hertell,
Cornelius H. Bryson.

1841—64*th Session.*

William B. Maclay,
Paul Grout,
Norman Hickok,
Edmund J. Porter,
Cornelius H. Bryson,
Solomon Townsend,
David R. Floyd Jones,
Absalom A. Miller,
Conrad Swackhamer.
William McMurry,
Araham B. Davis,
John L. O'Sullivan,
George Weir.

1842—65*th Session.*

Solomon Townsend,
David R. Floyd Jones,
William B. Maclay,
George Weir,
Paul Grout,
Conrad Swackhamer,
William McMurry,
John L. O'Sullivan,
Daniel C. Pentz,
Joseph Tueker,
William Jones,
Elbridge G. Baldwin,
Auguste Davezac.

1843—66*th Session.*

James T. Thompson,
Edward Sanford,
Timothy R. Hibbard,
Edward H. White,
David R. Floyd Jones,
William McMurry,
George Paulding,
Absalom E. Miller,
George G. Glasier,
Charles P. Daly,
Daniel C. Pentz,
Robert Smith,
Elbridge G. Baldwin.

1844—67*th Session.*

Thomas Jeremiah,
Edward Sanford,
Joseph S. Bosworth,
Joshua Fleet,
William H. Jansen,
George G. Glasier,
Auguste Davezac,
Thomas N. Carr,
John E. Ross,
James H. Suydam,
Michael Burke,
Richard S. Williams,
George S. Mann.

1845—68*th Session.*

David E. Wheeler,
Roderick N. Morrison,
William S. Ross,
Thomas H. Oakley,
Abraham G. Thompson, jr.,
Harvey Hunt,
Eli C. Blake,
Jacob L. Fenn,
Severn D. Moulton,
James Jarvis,
Frederick E. Mather,
John J. R. De Puy,
John Culver.

1846—69*th Session.*

Alexander Stewart,
Alexander Wells,
Samuel J. Tilden,
Jonathan D. Stevenson,
John E. Develin,
Gerardus Boyce,
Wilson Small,
James H. Titus,
Robert H. Ludlow,
Joshua Fleet,
Thomas Spofford,
John Townsend,
Joseph C. Albertson.

1847—70*th Session.*

Wilson Small,
Alexander Stewart,
David J. Chatfield,
Daniel E. Sickles,
John H. Bowie,
John S. Develin,
Norman B. Smith,
Henry Keyser,
Charles Baxter,
Michael Walsh,
Lyman Candee,
James C. Rutherford,
Alexander M. Alling,
Dennis Garrison,
Edward R. Carpentier.
Uzziah Wenman.

1848—71*st Session.*

1. J. Phillips Phenix,
2. James Bowen,
3. John H. Bowie,
4. John F. Rodman,
5. Peter H. Titus,
6. Samuel G. Raymond,
7. William B. Meach,
8. Thomas Charlock,
9. Dennis Garrison,
10. Martin H. Truesdell,
11. Alexander Stewart,
12. Michael Walsh,
13. Erastus C. Benedict,
14. Robert G. Campbell,
15. Merwin R. Brewer,
16. James Brooks.

1849—72*d Session.*

1. Ephraim H. Judson,
2. James Bowen,
3. Henry J. Allen,
4. George J. Cornell,
5. Samuel T. McKinney,
6. James W. Beekman,
7. Abraham Van Orden,
8. William Dodge,
9. Charles Perley,
10. Garret H. Stryker,
11. Robert B. Folger,
12. Daniel B. Taylor,
13. Joseph B. Varnum, jr.,
14. Robert G. Campbell,
15. Merwin R. Brewer,
16. Albert Gilbert.

1850—73*d Session.*

1. John H. White,
2. James Bowen,
3. Henry J. Allen,
4. Abram Wakeman,
5. Thomas Truslow,
6. Jonathan W. Allen,
7. Henry J. Raymond,
8. Benjamin W. Bradford,
9. Jeremiah C. D. B. Fowler
10. James Monroe,
11. Gilbert C. Deane,
12. Abraham B. Davis,
13. Joseph B. Varnum, jr.,
14. George G. Waters,
15. George C. Waters,
16. Albert Gilbert.

1851—74*th Session.*

1. Albert A. Thompson,
2. Charles R. Swords,
3. Henry J. Allen,
4. Abram Wakeman,
5. Michael Dougherty,
6. Wyllis Blackstone,
7. Henry J. Raymond,
8. Sanford L. Macomber,
9. John Ryan,
10. Lebbeus B. Ward,
11. James Dewey,
12. William S. Gregory,
13. Joseph B. Varnum, jr.,
14. George Clark,
15. John J. Townsend,
16. William D. Greene.

1852—75*th Session.*

1. William Minor,
2. Patrick G. Moloney,
3. Joseph Rose, jr.,
4. Theodore A. Ward,
5. John Brown,
6. Wyllis Blackstone,
7. Freeborn G. Luckey,
8. Moses D. Gale,
9. Aaron B. Rollins,
10. James Monroe,
11. David O'Keefe,
12. Michael Walsh,
13. William Taylor,
14. Andrew Leary,
15. Thomas P. St. John,
16. Ephraim L. Snow.

NIAGARA COUNTY.

1808-9—32*d Session.*

Archibald S. Clark.

1810—33*d Session.*

Archibald S. Clark.

1811—34*th Session.*

Archibald S. Clark.

1812—35*th Session.*

Ebenezer Walden.

1812-13—36*th Session.*

Jonas Williams.

1814—37*th Session.*

Jonas Williams.

1814-15—38*th Session.*

Joseph McClure.

1816—39*th Session.*

Daniel McCleary, Elias Osborn.

1816-17—40*th Session.*

Richard Smith, Jedediah Prendergast.

1818—41*st Session.*

Isaac Phelps,	Robert Fleming.

1819—42*d Session.*

Philo Orton,	Isaac Phelps.

1820—43*d Session.*

Oliver Forward,	Elial T. Foote.

1820-21—44*th Session.*

William Hotchkiss,	Jedediah Prendergast.

1822—45*th Session.*

David Eason,	Thomas B. Campbell.

1823—46*th Session.*

Benjamin Barlow, Jr.

1824—47*th Session.*

Daniel Washburn.

1825—48*th Session.*

Daniel Washburn.

1826—49*th Session.*

William King.

1827—50*th Session.*

John Garnsey.

1828—51*st Session.*

John Garnsey.

1829—52*d Session.*

John Garnsey.

1830—53*d Session.*

Samuel De Veaux.

1831—54*th Session.*

Henry Norton.

1832—55*th Session.*

Henry Norton.

1833—56*th Session.*

Henry Norton.

1834—57*th Session.*

Robert Fleming.

1835—58*th Session.*

Hiram McNeil.

1836—59*th Session.*

Hiram Gardner.

1837—60*th Session.*

Hiram McNeil,
Reuben H Boughton.

1838—61*st Session.*

Davis Hurd,
Peter B. Porter, Jr.

1839—62*d Session.*

Davis Hurd,
Peter B. Porter, Jr.

1840—63*d Session.*

Peter B. Porter, Jr.,
Francis O. Pratt.

1841—64*th Session.*

Peter B. Porter, Jr.,
Francis O. Pratt.

1842—65*th Session.*

Francis O. Pratt,
Thomas T. Flagler.

1843—66*th Session.*

Thomas T. Flagler,
John Sweeney.

1844—67*th Session.*

Luther Wilson,
John Sweeney.

1845—68*th Session.*

John Sweeney,
Levi F. Bowne.

1846—69*th Session.*

Lot Clark, Morgan Johnson.

1847—70*th Session.*

Benjamin Carpenter, Christopher H. Skeele.

1848—71*st Session.*

1. Elias Ransom, 2. Morgan Johnson.

1849—72*d Session.*

1. Hollis White, 2. Morgan Johnson.

1850—73*d Session.*

1. George W. Germain, 2. James Van Horn, Jr.

1851—74*th Session.*

1. Abijah H. Moss, 2. Jeptha W. Babcock.

1852—75*th Session.*

1. Abijah H. Moss, 2. Jeptha W. Babcock.

ONEIDA COUNTY.

1798-99—22*d Session.*

Henry McNeill, David Ostrom,
Abel French.

1800—23*d Session.*

David Ostrom, John Hale,
Nathan Smith.

1800-1—24*th Session.*

David Ostrom, Abel French,
Jesse Curtis.

1802—25*th Session.*

David Ostrom, Abel French,
Joel Bristol.

1803—26*th Session.*

James Dean,
John Lay,
Abel French,
Aaron Morse.

1804—27*th Session.*

David Ostrom,
David Coffeen,
Joseph Kirkland,
Abraham Van Eps.

1804-5—28*th Session.*

Joseph Jennings,
Joseph Kirkland,
George Brayton.

1806—29*th Session.*

Joseph Jennings,
Thomas Hart,
George Brayton.

1807—30*th Session.*

Charles Z. Platt,
Uri Doolitle,
George Brayton.

1808—31*st Session.*

Benjamin Wright,
Thomas P. Gold,
Henry McNeil.

1808-9—32*d Session.*

Benjamin Wright,
David Ostrom,
James Dean,
Joel Bristol.

1810—33*d Session.*

David Ostrom,
John Storrs,
John Humaston,
Samuel Chandler,
Levi Carpenter, Jr.

1811—34*th Session.*

George Huntington,
John Storrs,
Henry McNeil,
Isaac Brayton,
George Doolittle.

1812—35*th Session.*

George Huntington,
Joel Bristol,
Erastus Clarke,
John Storrs,
Isaac Brayton.

1812-13—36*th Session.*

George Huntington,
Josiah Bacon,
Erastus Clark,
John Lay,
Nathan Townsend.

1814—37*th Session.*

Henry McNeil,
Laurens Hall,
Isaac Brayton,
Theodore Sill,
James Lynch.

1814-15—38*th Session.*

Theodore Hill,
John Storrs,
Rufus Pettibone,
James Lynch,
John Lay.

1816—39*th Session.*

James Lynch,
Jesse Curtis,
Roderick Morrison,
Richard Sanger,
Isaac Brayton.

1816-17—40*th Session.*

David J. Ambler,
Martin Hawley,
Henry Huntington,
Newton Marsh,
Wheeler Barnes.

1818—41*st Session.*

Nathan Williams,
Henry Huntington,
Joseph Kirkland,
George Brayton,
Theor Woodruffe.

1819—42*d Session.*

Theor Woodruffe,
Luther Guiteau,
George Huntington,
David P. Hoyt,
Ezekiel Bacon.

1820—43*d Session.*

George Huntington,
Henry McNeil,
John Storrs,
Theophilus S. Morgan,
James Dean, Jr.

1820-21—44th *Session.*

Allen Fraser, Josiah Bacon,
George Huntington, William Root,
Joseph Kirkland.

1822—45th *Session.*

George Huntington, Samuel Chandler,
Greene C. Bronson, Peter Pratt,
Israel Stoddard.

1823—46th *Session.*

Thomas H. Hamilton, Uri Doolittle,
Henry Wager, Samuel Wetmore,
James Lynch.

1824—47th *Session.*

Henry Wager, Apollos Cooper,
Joseph Allen, John Ruger,
Joseph Grant.

1825—48th *Session.*

Joseph Kirkland, Samuel Woodworth,
Israel Stoddard, Boughton White,
David Pierson.

1826—49th *Session.*

Theodore Sill, Israel Stoddard,
Lawrence Hull, Russell Clark,
Aaron Barnes.

1827—50th *Session.*

Theodore Sill, John Billings,
Winthrop H. Chandler, John Parker,
Benjamin P. Johnson.

1828—51st *Session.*

Benjamin P. Johnson, Eli Savage,
Thomas E. Clark, S. Sidney Breese,
Gardiner Avery.

1829—52*d Session.*

Reuben Bacon,
Fortune C. White,
Eli Savage,
Reuben Tower,
Benjamin P. Johnson.

1830—53*d Session.*

Eli Savage,
Arnon Comstock,
Ithai Thompson,
Elisha Pettibone,
Linus Parker.

1831—54*th Session.*

Arnon Comstock,
Reuben Bettes,
John F. Trowbridge,
David Moulton,
Riley Shepard.

1832—55*th Session.*

Daniel Twitchell,
David Moulton,
Nathaniel Fitch,
Rutger B. Miller,
Lemuel Hough.

1833—56*th Session.*

Squire Utley,
Ichabod C. Baker,
Levi Buckingham,
John Dewey,
David Wager.

1834—57*th Session.*

Ithai Thompson,
Hiram Shays,
Pomeroy Jones,
Aaron Stafford,
Israel S. Parker.

1835—58*th Session.*

Amos Woodworth,
Merrit Brooks,
David Wager,
Riley Shepard,
Dan P. Cadwell.

1836—59*th Session.*

Henry Graves,
Jared C. Pettibone,
John Stryker,
William Knight.
John W. Hale.

1837—60*th Session.*

Lester N. Fowler,
Andrew S. Pond,
Levi Buckingham,
John I. Cook.

1838—61*st Session.*

Russel Fuller,
Fortune C. White,
James S. T. Stranahan,
Henry Hearsey.

1839—62*d Session.*

Ward Hunt,
Israel Stoddard,
Jesse Armstrong,
Amasa S. Newberry.

1840—63*d Session.*

Charles A. Mann,
John F. Trowbridge,
Nelson Dawley,
Anson Knibloe.

1841—64*th Session.*

Luke Hitchcock,
Calvin Dawley,
Joseph Halleck,
Nathaniel Odell.

1842—65*th Session.*

Ichabod C. Baker,
Ebenezer Robbins,
Dewitt C. Stephens,
Horatio Seymour.

1843—66*th Session.*

David Murray,
John H. Tower,
Amos S. Fassett,
Dan P. Cadwell.

1844—67*th Session.*

Horatio Seymour,
James Douglass,
Richard Empey,
Justus Childs.

1845—68*th Session.*

Horatio Seymour,
Andrew Billings,
Calvert Comstock,
Merit Brooks.

1846—69*th Session.*

Benjamin F. Cooper.
Chauncey C. Cook,
Daniel G. Dorrance,
Russel Fuller.

1847—70*th Session.*

John Dean,
Abel E. Chandler,
Isaac Curry,
Nathan Burchard.

1848—71*st Session.*

1. Luke Smith,
2. Warren Converse,
3. Bloomfield J. Beach,
4. Henry Wager.

1849—72*d Session.*

1. Oliver Prescott,
2. Nehemiah N. Pierce,
3. James M. Elwood,
4. Chauncey Stevens.

1850—73*d Session.*

1. William J. Bacon,
2. Ralph McIntosh,
3. Robert Frazier,
4. Luther Leland.

1851—74*th Session.*

1. Joseph Benedict,
2. Lorenzo Rouse,
3. Lewis Rider,
4. George Brayton.

1852—75*th Session.*

1. George D. Williams,
2. Chauncey S. Butler,
3. Henry Sandford,
4. John I. Castle.

ONONDAGA COUNTY.

1797—20*th Session.*

Silas Halsey.

1798—21*st Session.*

Silas Halsey,
Comfort Tyler.

1798-99—22*d Session.*

John Richardson,
Edward Paine.

1800—23*d Session.*

Ebenezer Butler, jun.

1800-01—24*th Session.*

Asa Danforth.

1802—25*th Session.*

Asa Danforth.

1803—26*th Session.*

John Lamb, John McWhorter.

1804—27*th Session.*

James Geddes, John McWhorter.

1804-05—28*th Session.*

William I. Vredenburgh, John Ballard.

1806—29*th Session.*

Jasper Hopper, William I. Vredenburgh.

1807—30*th Session.*

Ozias Burr, Squire Manro.

1808—31*st Session.*

Joshua Forman, John McWhorter.

1808-9—32*d Session.*

Jacobus Depuy, Barnet Mooney.

1810—33*d Session.*

Jacobus Depuy, Barnet Mooney.

1811—34*th Session.*

Jasper Hopper, Robert Earll.

1812—35*th Session.*

Barnet Mooney. Jonathan Stanley, jun.

1812-13—36*th Session.*

Isaac Smith, Moses Nash.

1814—37*th Session.*

Barnet Mooney, Moses Nash.

1814-15—38*th Session.*

Hezekiah L. Granger,
James Porter.

1816—39*th Session.*

George Hall,
Truman Adams,
Elijah Miles,
Nathan Williams.

1816-17—40*th Session.*

Elijah Miles,
Asa Wells,
James Webb,
Gideon Wilcoxson.

1818—41*st Session.*

Abijah Earll,
Asa Wells,
James Webb,
David Munro.

1819—42*d Session.*

David Munro,
Elisha Litchfield,
Henry Case
Nathan Williams.

1820—43*d Session.*

Henry Seymour,
Jonas Earll, jun.,
Lewis Smith,
Henry Field.

1820-21—44*th Session.*

Jonas Earll,
Lewis Smith,
George Petit,
Jonathan Deming.

1822—45*th Session.*

James Geddes,
Josephus Barker,
David Munro,
Silvester Gardner.

1823—46*th Session.*

Victory Birdseye,
Timothy Barber,
Samuel L. Edwards,
Harold White.

1824—47*th Session.*

Samuel L. Edwards,
Timothy Barber,
George Petit,
Matthew Van Vleck.

1825—18*th Session.*

James R. Lawrence,
Moses Kinne,
James Petit,
Erastus Barber.

1826—49*th Session.*

Freeborn G. Jewett,
Chauncey Betts,
John G. Forbes,
David Willard.

1827—50*th Session.*

Daniel Moseley,
Chauncey Betts,
Aaron Burt,
Charles Jackson.

1828—51*st Session.*

Aaron Burt,
Timothy Barber,
David Baxter,
Gideon Frothingham.

1829—52*d Session.*

Lewis Smith,
Johnson Hall,
Samuel R. Mathews,
Herman Jenkins.

1830—53*d Session.*

Johnson Hall,
Thomas I. Gilbert,
Dorastus Lawrence,
Timothy Brown.

1831—54*th Session.*

Thomas I. Gilbert,
Otis Bigelow,
Jared H. Parker,
Elisha Litchfield.

1832—55*th Session.*

Elisha Litchfield,
Elijah W. Curtis,
Miles W. Bennett,
Ichabod Ross.

1833—56*th Session.*

Elisha Litchfield,
Asa Eastwood,
Myron L. Mills,
Gabriel Tappen.

1834—57*th Session.*

Oliver R. Strong,
Jared H. Parker,
Horace Wheaton,
Squire M. Brown.

1835—58*th Session.*

George Pettit,
Sandford C. Parker,
John Wilkinson,
David C. Lytle.

1836—59*th Session.*

Sandford C. Parker,
John Wilkinson,
David Munro,
Daniel Denison.

1837—60*th Session.*

Nathan Soule,
George Pettit,
William Porter, jr.,
Daniel Denison.

1838—61*st Session.*

Phares Gould,
James R. Lawrence,
Azariah Smith,
Victory Birdseye.

1839—62*d Session.*

James R. Lawrence,
Azariah Smith,
Phares Gould,
James L. Voorhees.

1840—63*d Session.*

Victory Birdseye,
Azariah Smith,
James R. Lawrence,
Phares Gould.

1841—64*th Session.*

Moses D. Burnett,
David Munro,
William Taylor,
William Fuller.

1842—65*th Session.*

William Taylor,
David Munro,
William Fuller,
John Spencer.

1843—66*th Session.*

Thomas McCarthy,
Charles R. Vary,
Benjamin French,
Thomas Sherwood.

1844—67*th Session.*

Elisha Litchfield,
Seth Hutchinson,
Thomas G. Alvord,
Warner Abbott.

1845—68*th Session.*

David Preston,
Dennis McCarthy,
Julius C. Kinne,
Lake I. Tefft.

1846—69*th Session.*

Lake I. Tefft,
Alonzo Wood,
Julius C. Kinne,
Elihu L. Phillips.

1847—70*th Session.*

Manoah Pratt,
William Henderson,
John Lakin,
Joseph Prindle,

1848—71*st Session.*

1. James Little,
2. Horace Hazen,
3. Thomas Spencer,
4. Curtis J. Hurd.

1849—72*d Session.*

1. Joseph J. Glass,
2. Myron Wheaton,
3. Joseph Slocum,
4. Samuel Hart.

1850—73*d Session.*

1. James Little,
2. Benjamin J. Cowles,
3. Elias W. Leavenworth,
4. Harvey G. Andrews.

1851—74*th Session.*

1. Demosthenes C. LeRoy,
2. John F. Clark,
3. George Stevens,
4. Daniel Denison.

1852—75*th Session.*

1. Lyman Norton,
2. William E. Tallman,
3. George Stevens,
4. John Merritt.

ONTARIO COUNTY.

1792—15*th Session.*

Eleazer Linsley.

1792-93—16*th Session.*

Isaac Chapin.

1794—17*th Session.*

Thomas Morris.

1795—18*th Session.*

Thomas Morris.

1796—19*th Session.*

Thomas Morris.

1797—20*th Session.*

Lemuel Chipman, Charles Williamson.

ONTARIO AND STEUBEN.

1798—21*st Session.*

Charles Williamson, Amos Hall,

1798-99—22*d Session.*

Amos Hall, Charles Williamson,

1800—23*d Session.*

Charles Williamson, Nathaniel Norton.

1800-1—24*th Session.*

Nathaniel Norton, Lemuel Chipman.

1802—25*th Session.*

Daniel Chapin, Peter B. Porter.

ONTARIO AND GENESEE.

1803—26*th Session.*

Polydore B. Wisner, Thaddeus Chapin,
Augustus Porter.

1804—27*th Session.*

Polydore B. Wisner, Nathaniel W. Howell,
Amos Hall.

1804-5—28*th Session.*

Daniel W. Lewis, Alexander Rea,
Amos Hall.

1806—29*th Session.*

Ezra Patterson,
Daniel W. Lewis,
Alexander Rea.

1807—30*th Session.*

Philetus Swift,
Asahel Warner,
Alexander Rea.

1808—31*st Session.*

Philetus Swift,
Amos Hall,
Asahel Warner, jun.

ONTARIO COUNTY.

1808-9—32*d Session.*

Hugh McNair,
Richard Leech,
William Rogers,
Micah Brooks,
Samuel Lawrence.

1810—33*d Session.*

Daniel Dorsey,
Gideon Pitts,
Valentine Brother,
Israel Chapin,
William Markham.

1811—34*th Session.*

Septimus Evans,
Reuben Hart,
Asahel Warner,
Stephen Phelps,
Hugh McNair

1812—35*th Session.*

Joshua Vanfleet
Ezra Waite,
David Southerland,
Nathaniel Allen,
Valentine Brother.

1813—36*th Session.*

David Southerland,
Gilbert Howell,
Abraham Dox,
Hugh McNair,
Asahel Warner.

1814—37*th Session.*

David Southerland,
Hugh McNair,
Joshua Vanfleet,
Stephen Phelps,
Asahel Warner.

1814-15—38*th Session.*

David Southerland,
Peter Allen,
Ira Selby,
James Roseburgh,
John Price.

1816—39*th Session.*

Jonathan Child,
Israel Chapin,
Myron Holley,
Alexander Kelsey,
Thomas Lee,
Henry Fellows,
Roger Sprague.

1816-17—40*th Session.*

Peter Allen,
Caleb Hopkins,
James Roseburgh,
Byram Green,
Joshua Lee,
Nathan Whitney,
Jonathan Child,

1818—41*st Session.*

Nathaniel Case,
Samuel Lawrence,
James Roseburgh,
Ira Selby,
John Van Vossen,
Ezra Waite,
Phinehas P. Bates.

1819—42*d Session.*

Byram Green,
John A. Stevens,
Eli Hill,
Asahel Warner,
Elijah Spencer,
William McCartney,
William Billinghurst.

1820—43*d Session.*

Byram Green,
John C. Spencer,
John Price,
Elisha B. Strong,
Valentine Brother,
Matthew Warner,
John Van Fossen.

1820-21—44*th Session.*

John C. Spencer,
William H. Spencer,
William Cornwell,
Claudius V. Boughton,
Truman Hart,
Oliver Culver,
Myron Holley.

1822—45*th Session.*

Aaron Remer,
Isaac Marsh,
Birdseye Brooks,
David White,
Byram Green.

1823—46*th Session.*

Aaron Remer,
Ira Selby,
Birdseye Brooks,
Richard Hogarth,
Philetus Swift,
Jacob Leach.

1824—47*th Session.*

Bowen Whiting,
Daniel Ashley,
Gideon Pitts.

1825—48*th Session.*

Bowen Whiting,
Gideon Pitts,
Claudius V. Boughton.

1826—49*th Session.*

Francis Granger,
Gideon Pitts,
Claudius V. Boughton.

1827—50*th Session.*

Francis Granger,
Nathan Parke,
Lemuel Morse.

1828—51*st Session.*

Francis Granger,
Heman Chapin,
Robert C. Nicholas.

1829—52*d Session.*

John Dickson,
Walter Hubbell,
Robert C. Nicholas.

1830—53*d Session.*

John Dickson, Robert C. Nicholas,
Francis Granger.

1831—54*th Session.*

John C. Spencer, Thomas Ottley,
Samuel Rawson.

1832—55*th Session.*

Francis Granger, Jonathan Mason,
Robert C. Nicholas.

1833—56*th Session.*

John C. Spencer, Ephraim W. Cleveland,
James H. Woods.

1834—57*th Session.*

Oliver Phelps, Aaron Younglove,
Peter Mitchell.

1835—58*th Session.*

Mark H. Sibley, Ariel Hendee,
William Hildreth.

1836—59*th Session.*

Mark H. Sibley, Henry Pardee,
Amos Jones.

1837—60*th Session.*

Henry W. Taylor, Amos Jones,
Henry Pardee.

1838—61*st Session.*

Henry W. Taylor, David Hudson,
Jonathan Buell.

1839—62*d Session.*

Henry W. Taylor, Augustus Sanger,
Z. Barton Stout.

1840—63*d Session.*

Henry W. Taylor, Reynold Peck,
Abraham A. Post.

1841—64*th Session.*

Alvah Worden, Isaac Mills,
Daniel A. Robinson.

1842—65*th Session.*

Peter M. Dox, Joseph C. Shelton,
Staats Green.

1843—66*th Session.*

Jedediah Dewey, Jr., Sylvester Austin,
James C. Brown.

1844—67*th Session.*

Lorenzo Clark, Israel Huntington,
Henry Pardee.

1845—68*th Session.*

Alvah Worden, Timothy Buel, Jr.,
Israel Huntington.

1846—69*th Session.*

Alvah Worden, Joseph C. Shelton,
Elias Cost.

1847—70*th Session.*

Emery B. Potter, Ezra Pierce.

1848—71*st Session.*

1. Charles S. Brother, 2. Hiram Ashley.

1849—72*d Session.*

1. Dolphin Stephenson, 2. Josiah Porter.

1850—73*d Session.*

1. John L. Dox. 2. Josiah Porter.

1851—74*th Session.*

1. Thomas J. McLouth,
2. Henry Pardee.

1852—75*th Session.*

1. William R. Pettit,
2. Elnathan W. Simmons.

ORANGE COUNTY.

1777—1*st Session.*

John Hathorn,
Jeremiah Clark,
Tunis Kuyper,
Roeluff Van Houten.

1778—2*d Session.*

Jeremiah Clark,
Roeluff Van Houten.

1779—3*d Session.*

John Hathorn,
Thomas Moffat,
Beezaleel Seely, Jr.,
John Coe.

1780-81—4*th Session.*

(See note to Albany county.)

1781-2—5*th Session.*

John Hathorn,
Jeremiah Clark,
John Stagg,
John Suffern.

1782-3—6*th Session.*

John Stagg,
Gilbert Cooper,
Jeremiah Clark,
John Hathorn.

1784—7*th Session.*

Gilbert Cooper,
John Hathorn,
Jeremiah Clark,
William Sickles.

1784-5—8*th Session.*

John Hathorn,
Jeremiah Clark,
William Sickles,
Gilbert Cooper.

1786—9*th Session.*

Henry Wisner, 3d,
Nathaniel Satterly,
John Bradner,
Gilbert Cooper.

1787—10*th Session.*

Gilbert Cooper,
Peter Taulman,
Robert Armstrong,
Jeremiah Clark.

1788—11*th Session.*

William Thompson,
Jeremiah Clark,
Henry Wisner, Jr.,
Peter Taulman.

1788-9—12*th Session.*

Henry Wisner Jr.,
Jeremiah Clark,
John Carpenter.

1789-90—13*th Session.*

John Carpenter,
Seth Marvin,
John D. Coe,
William Sickles.

1791—14*th Session.*

John Smith,
John D. Coe,
Seth Marvin,
John Carpenter

1792—15*th Session.*

John D. Coe,
Seth Marvin,
John Smith.

1792-3—16*th Session.*

Daniel Thew,
Reuben Hopkins,
John Smith.

1794—17*th Session.*

John D. Coe,
Seth Marvin,
John Wheeler.

1795—18*th Session.*

John Hathorn,
David Pye,
William Allison,

1796—19*th Session.*

David Pye,
Seth Marvin,
James M. Wilkin.

1797—20*th Session.*

Jonathan Cooley,
Seth Marvin,
Isaac Blanch.

1798—21*st Session.*

Moses Hatfield,
Benjamin Coe,
James Burt.

1798-99—22*d Session.*

Moses Philips,
James Burt,
John Blake, Jr.,
David M Westcott,
Hendric Smith.

1800—23*d Session.*

John Blake, Jr.,
Seth Marvin,
Andrew McCord,
James Burt,
Robert R. Burnet.

1800-1801—24*th Session.*

Andrew McCord,
Peter Townsend,
Aaron Burr,
Henry Tucker,
James Clinton.

1802—25*th Session.*

Andrew McCord,
Charles Clinton,
Sela Strong,
Joshua Brown,
James Burt.

1803—26*th Session.*

Reuben Neely,
William A. Clark,
James Burt,
James Finch, Jr.

1804—27*th Session.*

Joshua Brown,
Robert R. Burnet,
Henry Tucker,
Samuel S. Seward.

1804-5—28*th Session.*

John Barber,
John Hathorn,
John Tuthill,
Joshua Brown.

1806—29*th Session.*

David Dill,
John Wood,
William Crist,
Andrew McCord.

1807—30*th Session.*

Andrew McCord,
Abraham Schultz,
William Crist,
John Wood.

1808—31*st Session.*

Selah Strong,
James W. Wilkin,
William Ross,
Henry Tucker.

1808-9—32*d Session.*

William Ross,
David Dill,
James W. Wilkin,
Anthony Davis.

1810—33*d Session.*

John Nicholson,
Selah Strong,
Joseph Morrell,
James Finch, jr.

1811—34*th Session.*

William Ross,
Seth Marvin,
Anthony Davis,
John Blake, jr.

1812—35*th Session.*

William Ross,
Peter Holbert,
Seth Marvin,
John Gasherie.

1812-13—36*th Session.*

William Ross,
John Blake, jr.,
David Dill,
John Wheeler.

1814—37*th Session.*

William Ross,
Benjamin Strong,
Benjamin Webb,
Joshua Sayre.

1814-15—38*th Session.*

Hezekiah Belknap,
Edward Ely,
Benjamin Woodward,
James Finch, jr.

1816—39*th Session.*

James Burt,
David Dill,
Nathaniel P. Hill,
Selah Strong.

1816-17—40*th Session.*

James Faulkner,
John Hallock, jr.,
James Finch,
Elihu Hedges.

1818—41*st Session.*

Isaac Belknap,
John McGarrah
William Mulliner,
Anthony Davis.

1819—42*d Session.*

Hezekiah Moffat,
John Blake,
Andrew Wilson,
Nathaniel P. Hill.

1820—43*d Session.*

Selah Tuthill,
Nathaniel P. Hill,
James French, jr.,
Abraham Vail.

1820-21—44*th Session.*

Benjamin Woodward,
James Burt,
John Hallock, jr.,
Charles Borland, jr.

1822—45*th Session.*

Abraham Shultz,
Joseph McLaughlin,
Egbert Jansen,
James Burt.

1823—46*th Session.*

William Finn,
David Christie,
Isaac Van Duzer,
Samuel Webb.

1824—47*th Session.*

Benjamin Dunning,
Samuel J. Wilkin,
Leonard Smith,
James Finch, jr.

1825—48*th Session.*

Samuel J. Wilkin, William Finn,
Nathaniel P. Hill, Joseph McLaughlin.

1826—49*th Session.*

Ogden Hoffman, Abraham Shultz,
Hudson McFarlan, Benjamin Woodward.

1827—50*th Session.*

William W. Crawford, Nathaniel Jones,
William Ecker.

1828—51*st Session.*

Nathaniel Jones, Peter Milliken,
David M. Westcott.

1829—52*d Session.*

Robert Fowler, Richard Graham,
James Waugh.

1830—53*d Session.*

Abraham M. Smith, Abraham Cuddeback,
Phineas Tuthill.

1831—54*th Session.*

Edward Blake, Robert Fowler,
James Hulse.

1832—55*th Session.*

Isaac R. Van Duzer, John Barker,
Charles Winfield.

1833—56*th Session.*

Isaac R. Van Duzer, Ezra Keeler,
James Finch.

1834—57*th Session.*

Gilbert O. Fowler, Charles Winfield,
Merit H. Cash.

1835—58*th Session.*

Robert Fowler, Merit H. Cash,
Robert Denniston.

1836—59*th Session.*

Charles Borland, jun., Thomas Van Etten,
Robert Sly.

1837—60*th Session.*

Merit H. Cash, William Morison,
William Jackson.

1838—61*st Session.*

Hudson McFarlan, Stephen W. Fullerton.
Goldsmith Denniston.

1839—62*d Session.*

Edward Blake, Joseph Slaughter
Robert Denniston.

1840—63*d Session.*

William S. Little, Benjamin Brown.
Robert Denniston.

1841—64*th Session.*

Gideon M. Cock, Lewis Cuddleback.
Robert Sly.

1842—65*th Session.*

Robert Lawson, Stacy Beakes,
Roswell Mead.

1843—66*th Session.*

Leonard Lee, John Van Duzer.
John W. Martin.

1844—67*th Session.*

Leonard Lee, David M. Smith,
George W. Tuthill.

1845—68*th Session.*

John Brooks, Richard M. Tuthill, jun.,
Thornton M. Niven.

1846—69*th Session.*

Wilkins Seacord, William L. Benedict,
Robert R. Thompson.

1847—70*th Session.*

William C. Hasbrouck, Joseph Davis,
Hudson McFarlin.

1848—71*st Session.*

1. Stephen Rapelje, 2. George Houston,
3. Augustus P. Thompson.

1849—72*d Session.*

1. David C. Bull, 2 David H Moffat, jun.,
3. Maurice Hoyt.

1850—73*d Session.*

1. William Graham, 2. Albert G. Owen,
3. Daniel D Durland.

1851—74*th Session.*

1. Oliver Belknap, 2. Phineas Rumsey,
3. Milton Barnes.

1852—75*th Session.*

1. Hugh B. Bull, 2. James B. Stevens,
3. Abraham J. Cuddeback.

ORLEANS COUNTY.

1826—49*th Session.*

Lathrop A. G. B. Grant.

1827—50*th Session.*

Abraham Cantine.

1828—51*st Session.*

Lyman Bates.

1829—52*d Session.*

George W. Flemming.

1830—53*d Session.*

John H. Tyler.

1831—54*th Session.*

John H. Tyler.

1832—55*th Session.*

William J. Babbit.

1833—56*th Session.*

Asahel Byington.

1834—57*th Session.*

Asa Clark, Jr.

1835—58*th Session.*

Asa Clark.

1836—59*th Session.*

John Chamberlain.

1837—60*th Session*

Silas M. Burroughs.

1838—61*st Session.*

Horatio Reed.

1839—62*d Session.*

Horatio Reed.

1840—63*d Session.*

John J. Walbridge.

1841—64*th Session.*

Richard W. Gates.

1842—65*th Session.*

Sanford E. Church.

1843—66*th Session.*
Elisha Wright.

1844—67*th Session.*
Sands Cole.

1845—68*th Session.*
Gardner Goold.

1846—69*th Session.*
Dexter Kingman.

1847—70*th Session.*
Abner Hubbard.

1848—71*st Session.*
Arba Chubb.

1849—72*d Session.*
Reuben Roblee.

1850—73*d Session.*
Silas M. Burroughs.

1851—74*th Session.*
Silas M. Burroughs.

1852—75*th Session.*
George M. Copeland.

OSWEGO COUNTY.

1823—46*th Session.*
Theophilus S. Morgan.

1824—47*th Session.*
Hasting Curtis.

1825—48*th Session.*
Chester Hayden.

1826—49*th* *Session.*

Henry Williams.

1827—50*th* *Session.*

Orris Hart.

1828—51*st* *Session.*

Orris Hart.

1829—52*d* *Session.*

George F. Falley.

1830—53*d* *Session.*

Hiram Hubbell.

1831—54*th* *Session.*

Joel Terrill.

1832—55*th* *Session.*

Avery Skinner.

1833—56*th* *Session.*

Avery Skinner.

1834—57*th* *Session.*

Orville Robinson.

1835—58*th* *Session.*

Jesse Crowell.

1836—59*th* *Session.*

Orville Robinson.

1837—60*th* *Session.*

Orville Robinson.

1838—61*st* *Session.*

Arvin Rice, John M. Richardson.

1839—62*d* *Session.*

Edward B. Judson. Samuel Hawley.

1840—63*d Session.*

Peter Devendorf, William Duer.

1841—64*th Session.*

William Duer, Edward B. Judson.

1842—65*th Session.*

Robert C. Kenyon, Peter Devendorf.

1843—66*th Session.*

William F. Allen, Alban Strong.

1844—67*th Session.*

William F. Allen, Alban Strong.

1845—68*th Session.*

Thomas Skelton, Luny Thayer.

1846—69*th Session.*

Thomas Skelton, Reuben Drake.

1847—70*th Session.*

Orrin B. Earl, M. Lindley Lee.

1848—71*st Session.*

1. M. Lindley Lee, 2. Andrew Z. McCarty.

1849—72*d Session.*

1. Henry Fitzhugh, 2. Edward W. Fox.

1850—73*d Session.*

1. William Lewis, Jr., 2. Luke D. Smith.

1851—74*th Session.*

1. Moses P. Hatch, 2. Benjamin F. Lewis.

1852—75*th Session.*

1. Edwin C. Hart, 2. James T. Gibson.

OTSEGO COUNTY.

1792—15*th Session.*

James Cannon.

1792-3—16*th Session.*

Jacob Morris.

1794—17*th Session.*

Benjamin Gilbert.

1795—18*th Session.*

Jacob Morris.

1796—19*th Session.*

Jacob Morris.

1797—20*th Session.*

Isaac Nash, Timothy Morse,
Francis Henry, Joshua H. Brett,
Abraham C. Ten Broeck.

1798—21*st Session.*

Joshua Dewey, Francis Henry,
Elijah Holt, Timothy Morse.

1798-99—22*nd Session.*

Jedediah Peck, Benjamin Gilbert,
Joshua Dewey, Francis Henry.

1800—23*rd Session.*

Robert Roseboom, Jacob Ten Broeck,
Jedediah Peck, Rensselaer Williams.

1800-01—24*th Session.*

Jedediah Peck, Jacob Ten Broeck,
Solomon Martin, Benjamin Hicks.

1802—25*th Session.*

Jedediah Peck, Jacob Ten Broeck,
Solomon Martin, Samuel Campbell.

1803—26*th Session.*

Jedediah Peck,
James Moore,
Daniel Hawks,
Luther Rich.

1804—27*th Session.*

Jedediah Peck,
Solomon Pier,
Peter P. Dumont,
Henry Scott.

1804-5—28*th Session.*

Humphrey Palmer,
Gurdon Huntington,
William Lathrop,
Luke Metcalf.

1806—29*th Session.*

Gurdon Huntington,
Rufus Steere,
Daniel Hawks,
Luther Rich.

1807—30*th Session.*

Robert Roseboom,
Henry Scott,
Thomas Brooks,
Gurdon Huntington.

1808—31*st Session.*

Robert Roseboom,
Gurdon Huntington,
Lemuel Fitch,
Henry Scott.

1808-9—32*d Session.*

Henry Scott,
Haviland Chase,
Roger Kinne,
Martin Luce.

1810—33*d Session.*

Benjamin Gilbert,
Abel DeForest,
Erastus Craft,
Joseph Bowne.

1811—34*th Session.*

Robert Roseboom,
Daniel Hawks,
Isaac Hayes,
Elisha H. Metcalf,

1812—35*th Session.*

Robert Roseboom,
Elijah H. Metcalf,
Daniel Hawks,
Isaac Hayes.

1812-13—36*th Session.*

Erastus Crafts,	Samuel Griffin,
Abel De Forest,	James Hyde.

1814—37*th Session.*

Abel DeForest,	Samuel Griffin,
James Hyde,	Erastus Crafts.

1814-15—38*th Session.*

Arunah Metcalf,	Lemuel Fitch,
Robert Roseboom,	Nathaniel Fenton.

1816—39*th Session.*

Isaac Hayes,	Arunah Metcalf,
William Campbell,	Silas Crippen,

Oliver Judd.

1816 17—40*th Session.*

Henry Albert,	William Campbell,
Cyrenus Noble,	Humphrey Palmer,

Elijah Turner.

1818—41*st Session.*

Stukely Ellsworth,	Joshua Babcock,
Nathaniel Fenton,	John Moore,

David Tripp.

1819—42*d Session.*

Thomas Howes,	John Blakely,
William Nichols,	Seth Case,

Caleb Eldred.

1820—43*d Session.*

Seth Chase,	Willard Coye,
Henry Ogden,	James Hawks,

Samuel Caldwell.

1820-21—44*th Session.*

David Tripp,	Joshua Babcock,
Caleb Eldred,	John Blakeley,

Stukeley Elsworth.

1822—45*th Session.*

John Blakely,
Calvin Brookins,
George Fenno,
Joseph Mumford,
Artemas Sheldon.

1823—46*th Session.*

Isaac Hayes,
William Utter,
William Hall,
Samuel M. Ingalls.

1824—47*th Session.*

John Blakeley,
Samuel Russell,
David Smith,
George W. Stillman.

1825—48*th Session.*

Isaac Hayes,
John Woodbury,
Oliver Judd,
Henry Baker.

1826—49*th Session.*

Isaac Hayes,
David Tripp,
Levi Beardsley,
William Fitch.

1827—50*th Session.*

John Judson,
Samuel Starkweather,
Sherman Page,
William Campbell.

1828—51*st Session.*

Arunah Metcalf,
Horace Lathrop,
Halsey Spencer,
Joseph Clyde.

1829—52*d Session.*

Peter Collier,
George Morrell,
Seth Hubbard, jr,
William Hall.

1830—53*d Session.*

William Baker,
Samuel M. Ingalls,
Jesse Rose,
Archibald Dickson.

1831—54*th Session.*

Henry Clark,
Schuyler Crippen,
Eben B. Morehouse,
Peter Collier.

1832—55*th Session.*

Amasa Thomson, William Kirby
Gilbert Cone.

1833—56*th Session.*

William Baker, Hiram Kinne,
Robert C. Lansing, Philo Bennet.

1834—57*th Session.*

William Baker, Ransom Spaffard,
Samuel S. Bowne, William Temple.

1835—58*th Session.*

Joseph Peck, Cornelius Jones,
Henry Harvey, Joseph Carpenter.

1836—59*th Session.*

Albert Benton, Sumner Ely,
Lyman J. Walworth, Ivory Holland.

1837—60*th Session.*

Harvey Strong, Ivory Holland,
Edmund B. Bigelow.

1838—61*st Session.*

Samuel Betts, jun., Jacob R. Lull,
John Drake.

1839—62*d Session.*

Levi S. Chatfield, Jonathan W. Brewer,
Daniel Gilchrist.

1840—63*d Session.*

Levi S. Chatfield, Arnold B. Watson,
Charles Walker.

1841—64*th Session.*

Levi S. Chatfield, Olcott C. Chamberlain,
Joel Gillett.

1842—65*th* Session.

Levi S. Chatfield, Festus Hyde,
Leonard Caryl.

1843—66*th* Session.

Harvey Hunt, Silas Burleson,
John R. Griggs.

1844—67*th* Session.

William W. Snow, George S. Gorham,
Nahum Thompson.

1845—68*th* Session.

Franklin B. Carpenter, Christopher D. Fellows,
Harry G. Harden.

1846—69*th* Session.

Delos W. Dean, Ebenezer Blakeley,
Benjamin Morehouse.

1847—70*th* Session.

Cyrus Brown, William Temple,
Francis U. Fenno.

1848—71*st* Session.

1. Benjamin Davis, 2. Olcott C. Chamberlain,
3. Elisha S. Sanders.

1849—72*d* Session.

1. L. Mortimer Gilbert, 2. David B. St John,
3. Charles C. Noble.

1850—73*d* Session.

1. Anson C. Parshall, 2. Joseph Peck,
3. Edward Pratt.

1851—74*th* Session.

1. Henry J. Campbell, 2. Edwin S. Coffin,
3. Worthington Wright.

1852—75*th Session.*

1. Hanson Wright, 2. Erastus King,
3. Harvey Keyes.

PUTNAM COUNTY.

1814—37*th Session.*

Joshua Barnum, Jr.

1814-15—38*th Session.*

David Knapp.

1816—39*th Session.*

Henry B. Lee.

1816-17—40*th Session.*

Edward Smith, Jr.

1818—41*st Session.*

William H. Johnstone.

1819—42*d Session.*

Hait Weed.

1820—43*d Session.*

David Knapp.

1820-21—44*th Session.*

Elisha Brown.

1822—45*th Session.*

Edward Smith.

1823—46*th Session.*

William Watts.

1824—47*th Session*

Stephen C. Barnum.

1825—48*th Session.*

David Knapp.

1826—49*th Session.*

Henry B. Cowles.

1827—50*th Session.*

Henry B. Cowles.

1828—51*st Session.*

Henry B. Cowles.

1829—52*d Session.*

Thomas W. Taylor.

1830– 53*d Session.*

James Towner.

1831—54*th Session.*

Bennet Boyd.

1832—55*th Session.*

Reuben D. Barnum.

1833—56*th Session.*

John Garrison.

1834—57*th Session.*

Jonathan Morehouse.

1835—58*th Session.*

Daniel Kent.

1836—59*th Session.*

Moses C. Robinson.

1837—60*th Session.*

John Crawford.

1838—61*st Session.*

Saxton Smith.

1839—62*d Session.*

Herman R. Stephens.

1840—63*d Session.*

Saxton Smith.

1841—64*th Session.*

James H. Cornwall.

1842—65*th Session.*

Ebenezer Foster.

1843—66*th Session.*

Sylvenus Warren.

1844—67*th Session.*

Saxton Smith.

1845—68*th Session.*

Benjamin Bailey.

1846—69*th Session.*

Benjamin Bailey.

1847—70*th Session.*

Benjamin B. Benedict.

1848—71*st Session.*

Chauncey R. Weeks.

1849—72*d Session.*

James J. Smalley.

1850—73*d Session.*

William Bowne.

1851—74*th Session.*

William Bowne.

1852—75*th Session.*

Nathan A. Howes.

QUEENS COUNTY.

1777—1*st Session.*

Philip Edsall,
Daniel Lawrence,
Benjamin Coe,
Benjamin Birdsall.

1778—2*d Session.*

No return for this year.

1779—3*d Session.*

Philip Edsall,
Daniel Lawrence,
Benjamin Coe.
Benjamin Birdsall.

1780-81—4*th Session.**

1781-82—5*th Session.*

Philip Edsall, (resigned, and Nathaniel Tom appointed in his place,)
Daniel Lawrence,
Benjamin Coe,
Benjamin Birdsall.

1782-83—6*th Session.*

Daniel Lawrence,
Benjamin Coe,
Benjamin Birdsall,
Nathaniel Tom.

1783-84—7*th Session.*

Henry Onderdonck,
James Townsend,
Benjamin Coe,
Samuel Riker.

1784-85—8*th Session.*

James Townsend,
Joseph Lawrence,
Abraham Skinner,
John Sands.

1785-86—9*th Session.*

Samuel Jones,
Daniel Whitehead Kissam,
James Townsend,
Daniel Duryee.

---

* See note to Albany county.

1786-87—10*th Session.*

James Townsend,
Samuel Jones,
Richard Thorn,
John Schenck.

1788—11*th Session.*

Samuel Jones,
Whitehead Cornell,
Francis Jervis, jun.,
Stephen Carman.

1788-89—12*th Session.*

Samuel Jones,
Stephen Carman,
Whitehead Cornell,
John Schenck.

1789-90—13*th Session.*

Samuel Clowes,
Whitehead Cornell,
Samuel Jones,
Stephen Carman.

1791—14*th Session.*

Samuel Clowes,
Samuel L. Mitchell,
Nathaniel Lawrence,
John Schenck.

1792—15*th Session.*

Samuel Clowes,
Nathaniel Lawrence,
Whitehead Cornell.

1792-93—16*th Session.*

Jacob Hicks,
Samuel Clowes,
Whitehead Cornell.

1794—17*th Session.*

Harry Peters,
Samuel Clowes,
Samuel Youngs.

1795—18*th Session.*

Nathaniel Lawrence,
Stephen Carman,
Samuel Clowes.

1796—19*th Session.*

Nathaniel Lawrence,
Stephen Carman,
Samuel Clowes.

1797—20*th Session.*

Lewis Cornwall,
Daniel Kissam,
John M. Smith,
William Pearsall.

1798—21*st Session.*

William Pearsall,
Whitehead Cornell,
Stephen Carman,
John I. Skidmore.

1798-99—22*d Session.*

John I. Skidmore,
John M. Smith,
William Mott,
Robert Moore.

1800—23*d Session.*

Abraham Montfoort,
Isaac Denton,
Jonah Hallet,
John I. Skidmore.

1800-01—24*th Session.*

Jonah Hallett,
Abraham Montfoort,
Joseph Pettit,
John I. Skidmore.

1802—25*th Session.*

John D. Ditmis,
Abraham Montfoort,
Joseph Pettit.
William Mott.

1803—26*th Session.*

Stephen Carman,
Abraham Montfoort,
Henry P. Seaman.

1804—27*th Session.*

Stephen Carman,
William Mott.
John D. Ditmis.

1804-5—28*th Session.*

Henry O. Seaman,
Benjamin Coe,
Stephen Carman.

1806—29*th Session.*

Henry O. Seaman,
John W. Seaman.
Benjamin Coe.

1807—30*th Session.*

Stephen Carman, William Mott,
John W. Seaman.

1808—31*st Session.*

Henry O. Seaman, Jacobus Montfoort,
John W. Seaman.

1808-9—32*d Session.*

Stephen Carman, Daniel Kissam,
William Townsend.

1810—33*d Session.*

Daniel Kissam, Stephen Carman,
William Townsend.

1811—34*th Session.*

Stephen Carman, William Townsend,
Daniel Kissam.

1812—35*th Session.*

Stephen Carman, Daniel Kissam,
John Fleet.

1812-13—36*th Session.*

Stephen Carman, John Fleet,
David Kissam.

1814—37*th Session.*

Daniel Kissam, John Fleet,
Stephen Carman.

1814-15—38*th Session.*

Stephen Carman, Daniel Kissam,
Solomon Worden.

1816—39*th Session.*

Stephen Carman, William Jones,
Daniel Kissam.

1816-17—40*th Session.*

Stephen Carman, Daniel Kissam,
William Jones.

1818—41*st Session.*

Stephen Carman, William Jones,
Daniel Kissam.

1819—42*d Session.*

Stephen Carman, John A. King,
Daniel Kissam.

1820—43*d Session.*

John A. King, Thomas Tredwell,
William Jones.

1820-21—44*th Session.*

John A. King, John D. Hicks,
Benjamin T. Kissam.

1822—45*th Session.*

William Jones, Thomas Tredwell,
Timothy Nostrand.

1823—46*th Session.*

Benjamin T. Kissam, John D. Hicks,

1824—47*th Session.*

William Jones, Thomas Tredwell,

1825—48*th Session.*

William Jones, Thomas Tredwell,

1826—49*th Session.*

William Jones, Thomas Tredwell.

1827—50*th Session.*

Thomas Tredwell.

1828—51*st Session.*

Thomas Tredwell.

1829—52*d* *Session.*

Henry F. Jones.

1830—53*d* *Session.*

Thomas Tredwell.

1831—54*th* *Session.*

Thomas Tredwell.

1832—55*th* *Session.*

John A. King.

1833—56*th* *Session.*

Thomas B. Jackson.

1834—57*th* *Session.*

Thomas B. Jackson.

1835—58*th* *Session.*

Thomas B. Jackson.

1836—59*th* *Session.*

Jarvis Jackson.

1837—60*th* *Session.*

Jarvis Jackson.

1838—61*st* *Session.*

John A. King.

1839—62*d* *Session.*

Elias Hicks.

1840—63*d* *Session.*

John A. King.

1841—64*th* *Session.*

John W. Lawrence.

1842—65*th* *Session.*

John W. Lawrence.

1843—66*th Session.*

Samuel Youngs.

1844—67*th Session.*

Samuel Youngs.

1845—68*th Session.*

Elbert F. Jones.

1846—69*th Session.*

John Willis.

1847—70*th Session.*

Wessell S. Smith.

1848—71*st Session.*

Wessell S. Smith.

1849—72*d Session.*

Wessell S. Smith.

1850—73*d Session.*

John S. Snedeker.

1851—74*th Session.*

James Maurice.

1852—75*th Session.*

Sylvanus S. Smith.

RENSSELAER COUNTY.

1792—15*th Session.*

Thomas Sickels,
Jonathan Brown,
John W. Schermerhorn,
John Knickerbacker, jr.,
Moses Vail.

1792–93—16*th Session.*

Benjamin Hicks,
Christopher Hutton,
Nicholas Staats,
Josiah Masters,
Jonathan Niles.

1794—17*th Session.*

Thomas Sickles,
Jonathan Brown,
Hosea Moffitt,
Jonas Odel,
Benjamin Hicks.

1795—18*th Session.*

Jonathan Brown,
Jacob C. Schermerhorn,
Daniel Gray,
Benjamin Hicks,
Hosea Moffitt.

1796—19*th Session.*

Daniel Gray,
John Knickerbacker,
John Bird,
Rowland Hall,
?

1797—20*th Session.*

John Bird,
Daniel Gray,
Jacob A. Fort,
James McKown,
John Carpenter,
Hosea Moffitt.

1798—21*st Session.*

John Bird,
Israel Thompson,
Jacob A. Fort,
Hosea Moffitt,
Daniel Gray,
Jonathan Hoag.

1798–99—22*d Session.*

John W. Schermerhorn,
Jacob A. Fort,
Jonathan Hoag,
Daniel Gray,
John I. Van Rensselaer,
Cornelius Lansing.

1800—23*d Session.*

Daniel Gray,
Jacob A. Fort,
George Tibbits,
Josiah Masters,
John W. Schermerhorn,
James McKown.

1800-1—24*th* *Session.*

John Lovett,	Hosea Moffitt,
Josiah Masters,	James McKown,
Jonathan Brown,	John E. Van Alen.

1802—25*th* *Session.*

Burton Hammond,	John Green,
John Knickerbacker, jr ,	John Carpenter,
Jacob A. Fort,	John Stevens.

1803—26*th* *Session.*

John Woodworth,	John Green,
John Ryan,	Jonathan Rouse.

1804—27*th* *Session.*

Asa Mann,	William Steward,
Charles Selden,	Samuel Vary, jr.,

Jonathan Rouse.

1804-5—28*th* *Session.*

Asa Mann,	James L. Hogeboom,
Jonathan Burr,	John Ryan,

Nehemiah King.

1806—29*th* *Session.*

Jacob Yates,	Nicholas Staats,
John Ryan,	Jonathan Niles,

William W. Reynolds.

1807—31*st* *Session.*

Gilbert Eddy,	William W. Reynolds,
Adam Yates,	Asa Mann,

Robert Woodworth.

1808—31*st* *Session.*

Ebenezer Jones,	Adam Yates,
Jacob Yates,	James L. Hogeboom.

1808-9—32*d* *Session.*

Henry Platt,	Derick Lane,
Cornelius I. Schermerhorn,	Israel Shepard.

1810—33*d Session.*

Timothy Leonard,
Cornelius I. Schermerhorn,
Henry Platt,
Jeremiah Schuyler.

1811—34*th Session.*

William M. Bliss,
Cornelius I. Schermerhorn,
Daniel Hull, jr.,
Cornelius Van Vechten.

1812—35*th Session.*

George Gardner,
Stephen Gregory,
Stephen Warren,
Abraham L. Viele.

1812-13—36*th Session.*

David Allen,
James H. Ball,
John Carpenter, jr.,
John Stevens.

1814—37*th Session.*

Bethel Mather,
Burton Hammond,
Barent Van Vleck,
William Bradley.

1814-15—38*th Session.*

David Allen,
Jacob A. Ten Eyck,
Zebulon Scriven,
Henry A. Lake.

1816—39*th Session.*

Herman Knickerbocker,
David E. Gregory,
Samuel I. McChesney,
Samuel Milliman,
Job Greene.

1816-17—40*th Session.*

Daniel Carpenter,
Burton Hammond,
John D. Dickinson,
Henry Platt,
Ebenezer W. Walbridge.

1818—41*st Session.*

Munson Smith,
Thomas Turner,
Abijah Bush,
Cornelius I. Schermerhorn,
Myndert Groesbeck.

1819—42*d Session.*

Stephen Warren,
Andrew Finch,
Henry Platt,
Daniel Simmons,
George R. Davis.

1820—43*d Session.*

George Tibbetts,
John Babcock,*
Ebenezer W. Walbride,
William C. Elmore,
David Doolittle.

1820-21—44*th Session.*

Richard P. Hart,
Calvin Thompson,
William B. Slocum,
John Van Alstyne,
William C. Barber.

1822—45*th Session.*

Gardner Tracy,
Daniel Gray,
Levi Rumsey,
Harper Rogers,
James Jones.

1823—46*th Session.*

Gilbert Eddy,
Chester Griswold,
Stephen Warren,
Joseph Case.

1824—47*th Session.*

Stephen Warren,
Martin Van Alstyne,
Henry Dubois,
Caleb Carr.

1825—48*th Session.*

John G. Vanderheyden,
John Carpenter,
Jacob C. Lansing,
Fenner Farmer.

1826—49*th Session.*

William Pierce,
John F. Groesbeck,
Augustus Filley,
Robert Collins.

1827—50*th Session.*

Jeremiah Dauchy,
John Defreest, jr.,
Reuben Halsted,
Henry Platt.

1828—51*st Session.*

William Pierce,
Samuel S. Cheever,
Joseph Wadsworth,
Alonzo G. Hammond,

1829—52*d Session.*

Henry Mallory,
William P. Heermans,
Martin Defreest,
Nathaniel Barnett, jr.

1830—53*d Session.*

George R. Davis,
Abraham C. Lansing,
Abiel Buckman,
Ziba Hewett.

1831—54*th Session.*

George R. Davis,
Aaron Worthington,
Martin Springer,
Chester Griswold.

1832—55*th Session.*

John C. Kemble,
Nicholas M. Masters,
Hosea Bennett,
Henry J. Genet.

1833—56*th Session.*

William P. Haskin,
Seth Parsons,
Alonzo G. Hammond,
John I. Kittle.

1834—57*th Session.*

Archibald Bull,
Smith Germond,
James Yates,
Nicholas B. Harris.

1835—58*th Session.*

Martin Springer,
Chester Griswold,
Daniel Simmons,
Jacob W. Lewis.

1836—59*th Session.*

David L. Seymour,
John J. Viele,
Nathan West,
Alexander O. Spencer.

1837—60*th* *Session*.

Abraham Van Tuyl, Alexander **Bryan,**
Randall A. Brown.

1838—61*st* *Session*.

James Wallace, Hezekiah Hull,
Jacob A. Ten Eyck.

1839—62*d* *Session*.

Day O. Kellogg, Richard P. Herrick,
Gideon Reynolds.

1840—63*d* *Session*.

W. H. Van Schoonhoven, Gerrardus Deyoe,
Samuel W. Hoag.

1841—64*th* *Session*.

W. H. Van Schoonhoven, John Filley,
Claudius Moffat.

1842—65*th* *Session*.

George R. Davis, Martinus Lansing,
Silas W. Waite.

1843—66*th* *Session*.

George R. Davis, Henry Vandenbergh,
Samuel Douglass.

1844—67*th* *Session*.

George B. Warren, Jonathan E. Whipple,
John L. Cole.

1845—68*th* *Session*.

William H. Van Schoonhoven, Harry Betts,
Ryer Herrmance.

1846—69*th* *Session*.

Henry Z. Haynor, Samuel C. McClellan,
Justus Nolton.

1847—70*th* *Session.*

Amos K. Hadley, David S. McNamara,
Joseph Gregory.

1848—71*st* *Session.*

1. Amos K. Hadley, 2. George T. Denison,
3. George W. Glass.

1849—72*d* *Session.*

1. Amos K. Hadley, 2. Benajah Allen,
3. William H. Budd.

1850—73*d* *Session.*

1. George Lesley, 2. Edward P. Pickett,
3. Lansing Sheldon.

1851—74*th* *Session.*

1. George Lesley, 2. William Russell,
3. Oliver C. Thompson.

1852—75*th* *Session.*

1. Jonas C. Heartt, 2. Albert E. Richmond,
3. William H. Herrick.

RICHMOND COUNTY.

1777—1*st* *Session.*

Joshua Mersereau, Abraham Jones.

1778—2*d* *Session.*

[No return made this year.]

1779—3*d* *Session.*

Joshua Mersereau.

1780-1—4*th* *Session.*

[See note to Albany county.]

1781-2—5*th* *Session*.

Joshua Mersereau.

1782-3—6*th* *Session*.

Joshua Mersereau.

1784—7*th* *Session*.

Joshua Mersereau, Cornelius Coffin.

1784-5—8*th* *Session*.

Adrian Bancker, Johannes Van Wagenen.

1786—9*th* *Session*.

Joshua Mersereau, John Dongan.

1787—10*th* *Session*.

John C. Dongan, Thomas Frost.

1788—11*th* *Session*.

John C. Dongan, Peter Winant.

1788-9—12*th* *Session*.

Abraham Bancker, John C. Dongan.

1789-90—13*th* *Session*.

Peter Winant, Abraham Bancker.

1791—14*th* *Session*.

Peter Winant, Gozen Ryerss.

1792—15*th* *Session*.

Gozen Ryerss.

1792-93—16*th* *Session*.

Gozen Ryerss.

1794—17*th* *Session*.

Gozen Ryerss.

1795—18*th* *Session*.

Lewis Ryerss.

1796—19*th Session.*

Lewis Ryerss.

1797—20*th Session.*

Lewis Ryerss.

1798—21*st Session.*

Peter I. Micheau.

1798-99—22*d Session.*

Paul Micheau.

1800—23*d Session.*

John P. Ryers.

1800-1—24*th Session.*

Paul I. Micheau.

1802—25*th Session.*

Paul I. Micheau.

1803—26*th Session.*

Paul I. Micheau.

1804—27*th Session.*

John Housman.

1804-5—28*th Session.*

John Dunn.

1806—29*th Session.*

John Dunn.

1807—30*th Session.*

David Mersereau.

1808—31*st Session.*

David Mersereau.

1808-9—32*d Session.*

David Mersereau.

1810—33*d Session.*

Richard Conner.

1811—34*th Session.*

James Guyon.

1812—35*th Session.*

James Guyon.

1812-13—36*th Session.*

James Guyon, Jr.

1814—37*th Session.*

James Guyon, Jr.

1814-15—38*th Session.*

Jesse Oakley.

1816—39*th Session.*

Richard Coursin.

1816-17—40*th Session.*

Richard C. Corson.

1818—41*st Session.*

Richard C. Corson.

1819—42*d Session.*

Harmanus Guyon.

1820—43*d Session.*

Harmanus Guyon.

1820-21—44*th Session.*

Samuel Barton.

1822—45*th Session.*

Samuel Barton.

1823—46*th Session.*

Isaac R. Houseman.

1824—47*th Session.*

Henry Perine.

1825—48*th Session.*

Hermanus Garretson.

1826—49*th Session.*

No election.

1827—50*th Session.*

Abraham Cole.

1828—51*st Session.*

Abraham Cole.

1829—52*d Session.*

John Vanderbilt.

1830—53*d Session.*

John T. Harrison.

1831—54*th Session.*

John T. Harrison.

1832—55*th Session.*

Jacob Mersereau.

1833—56*th Session.*

Jacob Mersereau.

1834—57*th Session.*

Paul Mersereau.

1835—58*th Session.*

Lawrence Hillyer.

1836—59*th Session.*

John Garritson, jun.,

1837—60*th Session.*

Lawrence Hillyer.

1838—61*st Session.*

Israel Oakley.

1839—62*d Session.*

Israel Oakley.

1840—63*d Session.*

Boint P. Winant.

1841—64*th Session.*

Israel Oakley.

1842—65*th Session.*

Henry Cole.

1843—66*th Session.*

Henry Cole.

1844—67*th Session.*

William Nicles.

1845—68*th Session.*

Peter Mersereau.

1846—69*th Session.*

George H. Cole.

1847—70*th Session.*

George H. Cole.

1848—71*st Session.*

Ephraim J. Totten.

1849—72*d Session.*

Gabriel P. Disosway.

1850—73*d Session.*

Benjamin P. Prall.

1851—74*th Session.*

William H. Anthon.

1852—75*th Session.*

Lawrence N. Coitelyou.

ROCKLAND COUNTY.

1798-99—22d *Session.*

Benjamin Coe.

1800—23d *Session.*

Samuel G. Verbryck.

1800-1—24th *Session.*

Samuel G. Verbryck.

1802—25th *Session.*

Peter De Noyelles.

1803—26th *Session.*

Peter De Noyelles.

1804—27th *Session.*

Samuel G. Verbryck.

1804-5—28th *Session.*

John Cole.

1806—29th *Session.*

John Haring.

1807—30th *Session.*

Samuel G. Verbryck.

1808—31st *Session.*

Samuel G. Verbryck.

1808-9—32d *Session.*

Samuel G. Verbryck.

1810—33d *Session.*

Peter S. Van Orden.

1811—34th *Session.*

Peter S. Van Orden.

1812—35*th Session.*

Peter S. Van Orden.

1812-13—36*th Session.*

Peter S. Van Orden.

1814—37*th Session.*

Peter S. Van Orden.

1814-15—38*th Session.*

Peter S. Van Orden.

1816—39*th Session.*

Cornelius A. Blauvelt.

1816-17—40*th Session.*

Cornelius A. Blauvelt.

1818—41*st Session.*

Abraham Gurnee.

1819—42*d Session.*

Abraham Gurnee.

1820—43*d Session.*

Samuel G. Verbryck.

1820-21—44*th Session.*

Abraham Gurnee.

1822—45*th Session.*

Cornelius Blauvelt.

1823—46*th Session.*

John I. Suffern

1824—47*th Session.*

Peter S. Van Orden.

1825—48*th Session.*

Abraham Gurnee.

1826—49*th Session.*

Abraham Gurnee.

1827—50*th Session.*

Levi Sherwood.

1828—51*st Session.*

Levi Sherwood.

1829—52*d Session.*

George S. Allison.

1830—53*d Session.*

George S. Allison.

1831—54*th Session.*

John J. Eckerson.

1832—55*th Session.*

Isaac I. Blauvelt.

1833—56*th Session.*

James D. L. Montanye.

1834—57*th Session.*

Daniel Johnson.

1835—58*th Session.*

Edward Suffern.

1836—59*th Session.*

Daniel Johnson.

1837—60*th Session.*

Abraham I. Demarest.

1838—61*st Session.*

David Clark.

1839—62*d Session.*

Benjamin Blackledge.

1840—63d *Session.*

William F. Frazer.

1841—64*th Session.*

Edward De Noyelles.

1842—65*th Session.*

Edward De Noyelles.

1843—66*th Session.*

Cornelius M. Demarest.

1844—67*th Session.*

John Haring, jr.

1845—68*th Session.*

Joseph P. Brower.

1846—69*th Session.*

Sampson Marks.

1847—70*th Session.*

John A. Haring.

1848—71*st Session.*

Lawrence J. Sneden.

1849—72*d Session.*

Mathew D. Bogart.

1850—73*d Session.*

Brewster J. Allison.

1851—74*th Session.*

Jacob Sickles.

1852—75*th Session.*

John Demarest.

ST. LAWRENCE COUNTY.

1808-9—32*d Session.*

Alexander Richards.

1810—33*d Session.*

Roswell Hopkins.

1811—34*th Session.*

Roswell Hopkins.

1812—35*th Session.*

Roswell Hopkins.

1812-13—36*th Session.*

Roswell Hopkins.

1814—37*th Session.*

Louis Hasbrouck.

1814-15—38*th Session.*

David A. Ogden.

1816—39*th Session.*

?

1816-17—40*th Session.*

William W. Bowen.

1818—41*st Session.*

?

1819—42*d Session.*

Joseph York.

1820—43*d Session.*

Joseph York.

1820-21—44*th Session.*

Joseph York.

1822—45*th Session.*

William H. Vining.

1823—46*th Session.*

Nathaniel F. Winslow.

1824—47*th Session.*

Nathaniel F. Winslow.

1825—48*th Session.*

Jacob A. Vanderheuvel.

1826—49*th Session.*

Baron S. Doty.

1827—50*th Session.*

Silvester Gilbert, Baron S. Doty.

1828—51*st Session.*

Jabez Willes, Moses Rowley.

1829—52*d Session.*

Harvey D. Smith, Jonah Sandford.

1830—53*d Session.*

Jonah Sandford, Asa Sprague, Jr.

1831—54*th Session.*

Asa Sprague, Joseph Freeman.

1832—55*th Session.*

William Allen, Edwin Dodge.

1833—56*th Session.*

William Allen, Sylvester Butrick.

1834—57*th Session.*

Sylvester Butrick, Jabez Willes.

1835—58*th Session.*

Preston King, William S. Paddock.

1836—59*th Session.*

Preston King, William S. Paddock.

1837—60*th Session.*

Preston King, William S. Paddock.

1838—61*st Session.*

Preston King, Myron G. Peck.

1839—62*d Session.*

Myron G. Peck, Asa Sprague.

1840—63*d Session.*

Asa Sprague, Zenas Clarke.

1841—64*th Session.*

Zenas Clarke, Solomon Pratt.

1842—65*th Session.*

George Redington, Calvin T. Hurlburd.

1843—66*th Session.*

George Redington, Calvin T. Hurlburd.

1844—67*th Session.*

George Redington, Calvin T. Hurlburd.

1845—68*th Session.*

John L. Russell, Asa L. Hazelton.

1846—69*th Session.*

Bishop Perkins, Asa Hazelton.

1847—70*th Session.*

Bishop Perkins, Phineas Atwater,
Henry Barlow.

1848—71*st Session.*

1. Charles G. Myers, 2. John S. Chipman,
3. Benjamin Holmes.

1849—72*d Session.*

1. Harlow Goddard, 2. ustus B. Pickett,
3. Noble S. Elderkin.

1850—73*d Session.*

1. Harlow Goddard, 2. John Horton,
3. Noble S. Elderkin.

1851—74*th Session.*

1. Smith Stilwell, 2. John Horton,
3. Noble S. Elderkin.

1852—75*th Session.*

1. Smith Stilwell. 2. Benjamin Smith,
3. Parker W. Rose.

SARATOGA COUNTY.

1792—15*th Session.*

Benjamin Rosekrans, Sidney Berry,
Elias Palmer, Andrew Mitchell.

1792-3—16*th Session.*

Adam Comstock, Beriah Palmer.

1794—17*th Session.*

John Ball, Beriah Palmer,
Adam Comstock, John McClelland.

1795—18*th Session.*

Adam Comstock, Jabez Davis,
Beriah Palmer, John B. Schuyler.

1796—19*th Session.*

Adam Comstock, John Bleecker,
Elias Palmer, John McClelland.

1797—20*th Session.*

Adam Comstock, Samuel Clark,
Seth C. Baldwin, John McClelland,
John Taylor.

1798—21*st Session.*

Adam Comstock,
Seth C. Baldwin,
Douw I. Fonda,
Samuel Clark,
Aaron Gregory.

1798-99—22*d Session.*

Adam Comstock,
Seth C. Baldwin,
Henry Corl, Jr.,
Samuel Clark,
James Warren.

1800—23*d Session.*

Adam Comstock,
Edward A. Watrous,
James Warren,
Samuel Clark,
Daniel Bull.

1800-1801—24*th Session.*

Adam Comstock,
James Merrill,
James Warren,
Henry Corl, Jr.,
Daniel Bull.

1802—25*th Session.*

Adam Comstock,
Samuel Clark,
Edward A. Watrous,
James Warren,
Henry Corl, Jr.

1803—26*th Session.*

Samuel Clark,
Gideon Goodrich,
Adam Comstock,
Othniel Looker.

1804—27*th Session.*

Othniel Looker,
Samuel Lewis,
Adam Comstock,
John Hunter.

1804-5—28*th Session.*

Asahel Porter,
Samuel Clark,
William Carpenter,
David Rogers.

1806—29*th Session.*

John McClelland,
John Cramer,
Jesse Mott,
Asahel Porter.

1807—30*th Session.*

Jesse Mott,	David Rogers,
Gideon Goodrich,	Chauncey Belding.

1808—31*st Session.*

Salmon Child,	Chauncey Belding,
Jesse Mott,	John McClelland.

1808-9—32*d Session.*

Salmon Child,	David Rogers,
Nehemiah Cande,	Daniel L. Van Antwerp.

1810—33*d Session.*

Samuel Lewis,	Joel Lee,
Calvin Wheeler,	Daniel L. Van Antwerp.

1811—34*th Session.*

Jesse Mott,	David Rogers,
John Cramer,	Jeremy Rockwell.

1812—35*th Session.*

John W. Taylor,	Joel Keeler,
Zebulon Mott,	Avery Starkweather.

1812-13—36*th Session.*

John W. Taylor,	Calvin Wheeler,
John Prior,	Caleb Holmes.

1814—37*th Session.*

Samuel Young,	John Dunning,
Avery Starkweather,	Nicholas W. Angle.

1814-15—38*th Session.*

Howel Gardner,	Samuel Young,
Benjamin Cowles,	Richard Ketcham,

1816—39*th Session.*

George Cramer,	Isaac Gere,
Asa C. Barney,	William Hamilton.

1816-17—40*th* *Session.*

Herman Gansevoort,
Zebulon Mott,
John Hamilton,
John Pettit.

1818—41*st* *Session.*

Earl Stimson,
John Gibson,
Staats Morris,
Elisha Powell.

1819—42*d* *Session.*

Joel Keeler,
John Rogers, Jr,.
William Hamilton,
Abner Carpenter.

1820—43*d* *Session.*

Billy J. Clark,
Elisha Powell,
Abraham Moe,
Jonathan Delans,Jr.

1820-21—44*th* *Session.*

Herman Gansevoort,
Zebulon Mott,
John Rogers,
John House.

1822—45*th* *Session.*

John Prior,
John Gilchrist,
Conrad Cramer,
Thomas Collamer.

1823—46*th* *Session.*

Valentine Campbell,
John Pettit,
Samuel Belding.

1824—47*th* *Session.*

Isaac Geer,
James McCrea,
Jeremy Rockwell.

1825—48*th* *Session.*

Nicholas B. Doe,
Philip Schuyler,
Alpheus Goodrich.

1826—49*th* *Session.*

Samuel Young,
David Benedict,
Thomas Dibble.

1827—50*th Session.*

Howell Gardner, Nicholas Emigh, Jr.,
John Gilchrist.

1828—51*st Session.*

Alpheus Goodrich, Eli M. Todd,
Thomas Howland.

1829—52*d Session.*

Gilbert Waring, Calvin Wheeler,
Joshua Mandeville.

1830—53*d Session.*

William Sheppard, Samuel Stewart,
Seth Perry.

1831—54*th Session.*

Oran G. Otis, John Gilchrist,
Howell Gardner.

1832—55*th Session.*

Oran Gray Otis, Ebenezer Couch
James Brisben, Jr.

1833--56*th Session.*

Ebenezer Couch, George Reynolds,
Ephraim Stevens.

1834—57*th Session.*

Eli M. Todd, Solomon Ellithorp,
Thomas J. Marvin.

1835—58*th Session.*

Asahel Philo, Eli Beecher,
William R. Van Benthuisen.

1836—59*th Session.*

David Benedict, Samuel Stimson,
Joel Lee.

1837—60*th* *Session.*

Seabury Allen, Halsey Rogers.

1838—61*st* *Session.*

Calvin Wheeler, Walter Van Veghten.

1839—62*d* *Session.*

John Stewart, Calvin Wheeler.

1840—63*d* *Session.*

John Stewart, Daniel Stewart.

1841—64*th* *Session.*

Abijah Peck, jr., Jesse H. Mead.

1842—65*th* *Session.*

Halsey Rogers, John Cramer.

1843—66*th* *Session.*

Azariah E. Stimson, Lyndes Emerson.

1844—67*th* *Session.*

James Groom, Ezra Wilson.

1845—68*th* *Session.*

William Wilcox, Edward Edwards.

1846—69*th* *Session.*

James M. Marvin, Chauncey Boughton.

1847—70*th* *Session.*

Joseph Daniels, Thomas C. Morgan.

1848—71*st* *Session.*

1. Cady Holister, 2. George Payn.

1849—72*d* *Session.*

1. Roscius R. Kennedy, 2. William W. Rockwell.

1850—73*d* *Session.*

1. James Noxon, 2. Frederick J. Wing.

1851—74*th* *Session.*

1. Abraham Leggett, 2. John L. Perry.

1852—75*th* *Session.*

1. Isaiah Blood, 2. Alexander H. Palmer.

SCHENECTADY COUNTY.

1810—33*rd* *Session.*

Henry Glenn, William North.

1811—34*th* *Session.*

James Boyd, John Young.

1812—35*th* *Session.*

James Boyd, John Young.

1812-13—36*th* *Session.*

Joseph Shurtleff, Alexander Combs.

1814—37*th* *Session.*

Lawrence Vrooman, Abraham Van Ingen.

1814-15—38*th* *Session.*

Ezekiel Sexton, John Victory.

1816—39*th* *Session.*

Henry Fryer, Hermanus A. Van Slyck.

1816-17—40*th* *Session.*

Hermanus Peck, John Victory.

1818—41*st* *Session.*

Daniel L. Antwerp, Simon A. Vedder.

1819—42*d* *Session.*

Simon A. Groot, James Frost.

1820—43*d Session.*

Christian Haverly,	Marinus Willet.

1820-21—44*th Session.*

Gerrit S. Vedder,	Richard McMichael.

1822—45*th Session.*

James Walker,	John F. D. Vedder.

1823—46*th Session.*

Peter H. Brooks.

1824—47*th Session.*

Isaac Riggs.

1825—48*th Session.*

John S. Vrooman.

1826—49*th Session.*

Robert Sanders.

1827—50*th Session.*

Alonzo C. Paige.

1828—51*st Session.*

Alonzo C. Paige.

1829—52*d Session.*

Alonzo C. Paige.

1830—53*d Session.*

Alonzo C. Paige.

1831—54*th Session.*

Aaron Carroll.

1832—55*th Session.*

Abraham Dorn.

1833—56*th Session.*

Cornelius C. Van Vranken.

1834—57*th* *Session.*

Simon Schermerhorn.

1835—58*th* *Session.*

David Ostrom.

1836—59*th* *Session.*

John B. Duane.

1837—60*th* *Session.*

Thomas Knight.

1838—61*st* *Session.*

Silas H. Marsh.

1839—62*d* *Session.*

Silas H. Marsh.

1840—63*d* *Session.*

Theodore W. Sanders.

1841—64*th* *Session.*

Abraham Pearse.

1842—65*th* *Session.*

Jonathan L. Burnham.

1843—66*th* *Session.*

Edward H. Walton.

1844—67*th* *Session.*

Archibald L. Linn.

1845—68*th* *Session.*

William Gifford.

1846—69*th* *Session.*

David M. Moore.

1847—70*th* *Session.*

David Caw.

1848—71*st Session.*

Abraham W. Toll.

1849—72*d Session.*

Israel R. Greene.

1850—73*d Session.*

James Allen.

1851—74*th Session.*

Reuben Ellwood.

1852—75*th Session.*

James Donnan.

SCHOHARIE COUNTY.

1796-97—20*th Session.*

John Rice.

1798—21*st Session.*

John Rice.

1798-99—22*d Session*

Peter Swart.

1800—23*d Session.*

Storm A. Becker.

1800-01—24*th Session.*

Joseph Borst, jun.

1802—25*th Session.*

Lawrence Lawyer.

1803—26*th Session.*

Lawrence Lawyer, jun., Henry Becker.

1804—27*th Session.*

Henry Becker, Freegift Patchin.

1804-05—28*th Session.*

Freegift Patchin, Henry Becker.

1806—29*th Session.*

Henry Bellinger, Henry Schaffer.

1807—30*th Session.*

Henry Schaffer, Peter Swart, jun.

1808—31*st Session.*

Peter Swart, jun., Henry Schaffer.

1808-9—32*d Session.*

John Ingold, jun., John Rice.

1810—33*d Session.*

John Ingold, John Rice.

1811—34*th Session.*

Henry Becker, Henry Hager.

1812—35*th Session.*

Henry Hager, John Redington.

1812-13—36*th Session.*

Heman Hickock, Peter A. Hilton.

1814—37*th Session.*

William C. Bouck, William Deitz.

1814-15—38*th Session.*

William C. Bouck, William Deitz.

1816—39*th Session.*

William C. Bouck, Peter A. Hilton,
Thomas Lawyer.

1816-17—40*th Session.*

Isaac Barber, Peter A. Hilton,
Aaron Hubbard.

1818—41*st Session.*

William C. Bouck, Nathan P. Tyler.
George H. Mann.

1819—42d *Session.*

Jedediah Miller, Peter Swart, jun.,
Aaron Hubbard.

1820—43d *Session.*

Jedediah Miller, Peter Swart, jun.,
Heman Hickock.

1820-21—44*th Session.*

Abraham Keyser, jun., Barnabas Eldridge,
Freegift Patchin.

1822—45*th Session.*

Abraham Keyser, jun., Harvey Watson,
Freegift Patchin.

1823—46*th Session.*

William Deitz, Peter W. Snyder.

1824—47*th Session.*

John Stryker, Marvine Judd.

1825—48*th Session.*

Joseph I. Borst, Freeman Stanton.

1826—49*th Session.*

Robert Eldredge, Martinus Mattice.

1827—50*th Session.*

William Mann, Samuel Baldwin.

1828—51*st Session.*

Henry Devereux, James Sweetman.

1829—52*d Session.*

Valentine Efner, Peter Hynds.

1830—53*d Session.*

Abraham L. Lawyer, Charles Watson.

1831—54*th Session.*

Robert Eldredge, Daniel Hager, jun.

1832—55*th Session.*

Alexander Crookshank, Jedediah Miller.

1833—56*th Session.*

Martinus Mattice, Jacob L. Lawyer.

1834—57*th Session.*

Watson Orr, John G. Young.

1835—58*th Session.*

Jonas Krum, John F. Hiller.

1836—59*th Session.*

Hiram Walden, Alvin Wilkins.

1837—60*th Session.*

Philip Mann, Reuben Merchant.

1838—61*st Session.*

Jedediah Miller, Mitchell Sandford.

1839—62*d Session.*

Harvey Bliss, George F. Fox.

1840—63*d Session.*

Seymour Boughton, Charles Goodyear.

1841—64*th Session.*

Jacob C. Skillman, Nicholas Beekman.

1842—65*th Session.*

George Wright, William Fink.

1843—66*th Session.*

John Osterhout, Abraham Richtmeyer.

1844—67*th Session.*

John Spickerman, Seth Eldredge.

1845—68*th* *Session.*

Henry Tibbetts, Seymour Boughton.

1846—69*th* *Session.*

Thomas Lawyer, Thomas Smith.

1847—70*th* *Session.*

Thomas Smith. Elisha Hammond.

1848—71*st* *Session.*

1. Adam Mattice, 2. James Parsons

1849—72*d* *Session.*

1. David B. Danforth, 2. Austin Sexton.

1850—73d *Session.*

1. Daniel D. Dodge, 2. John Avery.

1851—74*th* *Session.*

1. Lewis Rockwell, 2. Abraham L. Lawyer.

1852—75*th* *Session.*

1. Seymour Sornberger, 2. James Osterhout.

SENECA COUNTY.

1804-5—28*th* *Session.*

John Sayre.

1806—29*th* *Session.*

Cornelius Humfrey.

1807—30*th* *Session.*

Cornelius Humfrey.

1808—31*st* *Session.*

John Sayre.

1808-9—32*d* *Session.*

James McCall.

1810—33*d Session.*

Oliver C. Comstock.

1811—34*th Session.*

Robert S. Rose.

1812—35*th Session.*

Oliver C. Comstock.

1812-13—36*th Session.*

James McCall.

1814—37*th Session.*

James McCall.

1814-15—38*th Session.*

David Woodcock.

1816—39*th Session.*

Nichol Halsey,
Jacob L. Larzelere,
William Thompson.

1816-17—40*th Session.*

Archer Green,
William Thompson,
Jacob L. Larzelere.

1818—41*st Session.*

William Thompson,
Myndert M. Dox.

1819—42*d Session.*

William Thompson,
Ananias Welles.

1820—43*d Session.*

Robert S. Rose,
Thomas Armstrong.

1820-21—44*th Session.*

William Thompson,
Robert S. Rose.

1822—45*th Session.*

John Maynard,
James Dickson.

1823—46*th Session.*

Jonas Seely, Ananias Wells.

1824—47*th Session.*

Jonas Seely, Erastus Woodworth.

1825—48*th Session.*

Daniel Rhoad, James De Mott.

1826—49*th Session.*

Daniel Scott, Benjamin Hendricks.

1827—50*th Session.*

Daniel Scott, Daniel Rhoad.

1828—51*st Session.*

Andrew Glover, Erastus Woodworth.

1829—52*d Session.*

Daniel Scott, Septemus Evans.

1830—53*d Session.*

Septemus Evans, Samuel Blain.

1831—54*th Session.*

John Sayre, Benjamin Woodruff.

1832—55*th Session.*

Reuben D. Dodge, Erastus Woodworth.

1833—56*th Session.*

John De Mott, Renben D. Dodge.

1834—57*th Session.*

John D. Coe. Peter Bockoven.

1835—58*th Session.*

John D. Coe, Caleb Barnum.

1836—59*th Session.*

John G. Tubbs, Henry Simpson.

1837—60*th* *Session.*

John L. Bigelow.

1838—61*st* *Session.*

Nathan Wakeman.

1839—62*d* *Session.*

Gardner Wells.

1840—63*d* *Session.*

Orange W. Wilkinson.

1841—64*th* *Session.*

Daniel Holman.

1842—65*th* *Session.*

William C. Kelly.

1843—66*th* *Session.*

Matthew West.

1844—67*th* *Session.*

Helim Sutton.

1845—68*th* *Session.*

Robert L. Stevenson.

1846—69*th* *Session.*

Alanson Woodworth.

1847—70*th* *Session.*

Ansel Bascom.

1848—71*st* *Session.*

John Kennedy.

1849—72*d* *Session.*

Jacob G. Markell.

1850—73*d* *Session.*

Alfred Bolter.

1851—74*th* *Session.*

Orin Southwick.

1852—75*th Session.*

Robert R. Steele.

STEUBEN COUNTY.

1803—26*th Session.*

James Faulkner.

1804—27*th Session.*

James Faulkner.

1804-5—28*th Session.*

John Wilson.

1806—29*th Session.*

John Wilson.

1807—30*th Session.*

John Wilson.

1808—31*st Session.*

George Hornell.

1808-09—32*nd Session.*

Henry A. Townsend.

1810—33*rd Session.*

John Knox.

1811—34*th Session.*

John Knox.

1812—35*th Session.*

Jacob Teeple.

1812-13—36*th Session.*

Jacob Teeple.

1814—37*th Session.*

Daniel Cruger.

1814-15—38*th Session.*

Daniel Cruger.

1816—39*th Session.*

Daniel Cruger, Timothy H. Porter.

1816-17—40*th Session.*

Timothy H. Porter, William B. Rochester.

1818—41*st Session.*

William B. Rochester, James McCall.

1819—42*d Session.*

James McCall, John Dow.

1820—43*d Session.*

John Dow, Clark Crandall,

1820-21—44*th Session.*

John Dow, Clark Crandall.

1822—45*th Session.*

Grattan H. Wheeler, Amos Peabody.

1823—46*th Session.*

William Woods, George McClure.

1824—47*th Session.*

George McClure, Grattan H. Wheeler

1825—48*th Session.*

John Kennedy, James McBurney.

1826—49*th Session.*

Grattan H. Wheeler, Daniel Cruger.

1827—50*th Session.*

Paul C. Cook, George McClure.

1828—51*st Session.*

Dugald Cameron, William Woods.

1829—52*d Session.*

Randall Graves, Henry Phenix.

1830—53*d Session.*

Andrew B. Dickinson, Josiah Dunlap.

1831—54*th Session.*

Josiah Dunlap, Paul C. Cook.

1832—55*th Session.*

Edward Howell, John McBurney.

1833—56*th Session.*

William Kernan, William Hunter.

1834—57*th Session.*

William Kernan, Joshua Healy.

1835—58*th Session.*

Joshua Healy, Jeremiah Baker.

1836—59*th Session.*

Henry Switzer, Henry B. Searles.

1837—60*th Session*

Benjamin Smead, Henry G. Cotton,
John I. Poppins.

1838—61*st Session.*

Manning Kelly, David Hall,
Samuel Griggs.

1839—62*d Session.*

Andrew G. Chatfield, Johnson N. Reynolds,
Abram M. Sybolt.

1840—63*d Session.*

Abram M. Sybolt, Richard Brower,
Andrew G. Chatfield.

1841—64*th Session.*

Samuel A. Johnson, Andrew G. Chatfield,
William S. Hubble.

1842—65*th Session.*

Ziba A. Leland, Aaron W. Beach,
Francis E. Erwin.

1843—66*th Session.*

Francis E. Erwin, Ziba A. Leland,
Morris Brown.

1844—67*th Session.*

John Jamison, Asa McConnell,
Jeffrey Smith.

1845—68*th Session.*

Jacob Van Valkenburgh, Ansel C. Smith,
William C. Rogers.

1846—69*th Session.*

Otto F. Marshall, Andrew G. Chatfield,
William C. Rogers.

1847—70*th Session.*

William Hunter, William Diver,
Hiram Chapman.

1848—71*st Session.*

1. Abel Kendall, 2. John G. Mersereau,
3. Alexander H. Stephens.

1849—72*d Session.*

1. Abraham J. Quackenboss, 2. John G. Mersereau,
3. John K. Hale.

1850—73*d Session.*

1. Edwin F. Church, 2. Ferral C. Dininny,
3. James Alley.

1851—74*th Session.*

1. Charles G. Higby, 2. James H. Miles,
Joel Carrington.

1852—75*th Session.*

1. Robert B. Van Valkenburgh, 2. Benajah P. Bailey,
3. Nathaniel M. Perry.

SUFFOLK COUNTY.

1777—1*st Session.*

Burnet Miller, Ezra L'Hommedieu,
David Gelston, Thomas redwell,
Thomas Wickes.

1778—2*d Session.*

Thomas Tredwell, Ezra L'Hommedieu.

1779—3*d Session.*

Burnet Miller, Ezra L'Hommedieu,
David Gelston, Thomas Tredwell,
Thomas Wickes.

1780–81—4*th Session.*

(See note to Albany county.)

1781–82—5*th Session.*

Burnet Miller, Ezra L'Hommedieu,
David Gelston, Thomas Tredwell,
Thomas Wickes.

1782–83—6*th Session.*

Burnet Miller, Ezra L'Hommedieu,
David Gelston, Thomas Tredwell,
Thomas Wickes.

1783–84—7*th Session.*

David Gelston, Ebenezer Platt,
Thomas Youngs, John Brush,
Jeffrey Smith.

1784-85—8*th Session.*

David Gelston,
Ebenezer Platt,
Jeffrey Smith,
Thomas Youngs,
John Smith.

1785—9*th Session.*

Jonathan Nicoll Havens,
David Hedges,
Thomas Youngs,
Jeffrey Smith,
Nathaniel Gardiner.

1787—10*th Session.*

Jonathan N. Havens,
David Hedges,
Daniel Osborn,
John Smith,
Caleb Smith.

1788—11*th Session.*

Jonathan N. Havens,
David Hedges,
Daniel Osborn,
John Smith.

1788-89—12*th Session.*

Jonathan N. Havens,
David Hedges,
Nathaniel Gardiner,
John Smith,
Henry Scudder.

1789-90—13*th Session.*

Henry Scudder,
Jonathan N. Havens,
Nathaniel Gardiner,
John Smith,
Jared Landon.

1791—14*th Session.*

John Smith,
Jonathan N. Havens,
John Gelston,
Philetus Smith,
Thomas Wickham.

1792—15*th Session.*

Jonathan Nicoll Havens,
John Gelston,
John Smith,
Henry Scudder,

1792-93—16*th Session.*

Jonathan N. Havens,
Ebenezer Platt,
John Smith,
John Gelston.

1794—17*th Session*.

Jonathan N. Havens,
John Gelston,
John Smith,
Joshua Smith, jr.

1795—18*th Session*.

Jonathan Nicoll Havens,
John Gelston,
Joshua Smith, jr.,
Isaac Thompson.

1796—19*th Session*.

Abraham Miller,
Joshua Smith, jr.,
Jared Landon,
Silas Wood.

1797—20*th Session*.

Abraham Miller,
Joshua A. Smith, jr.
Jared Landon,
Silas Wood.

1798—21*st Session*.

Abraham Miller,
Josiah Reeve,
Silas Wood,
John Howard.

1798-99—22*d Session*.

Joshua Smith, jr.,
John Smith,
Nicoll Floyd,
Jared Landon.

1800—23*d Session*.

Silas Wood,
John Smith,
Jared Landon,
Nicoll Floyd.

1800-1—24*th Session*.

Nicoll Floyd,
Mills Phillips,
Abraham Miller,
Jared Landon.

1802—25*th Session*.

Israell Carll,
Jared Landon,
Abraham Miller,
Tredwell Scudder.

1803—26*th Session*.

Israel Carll,
Josiah Reeve,
Jonathan Dayton.

1804—27*th* *Session.*

David Hedges, Israel Carll,
Sylvester Dering.

1804-5—28*th* *Session.*

Jared Landon, Israel Carll,
Jonathan Dayton.

1806—29*th* *Session.*

Israel Carll, David Hedges,
Jared Landon.

1807—30*th* *Session.*

David Warner, Israel Carll.
David Hedges.

1808—31*st* *Session.*

Israel Carll, Jonathan Dayton,
Thomas S. Lester.

1808-9—32*d* *Session.*

Mills Phillips, Daniel T. Terry,
Abraham Rose.

1810—33*d* *Session.*

Abraham Rose, Tredwell Scudder,
John Rose.

1811—34*th* *Session.*

Tredwell Scudder, Jonathan S. Conklin,
Thomas S. Lester.

1812—35*th* *Session.*

Abraham Rose, Usher H. Moore,
Nahaniel Potter.

1812-13—36*th* *Session.*

Henry Rhodes, Caleb Smith,
Benjamin F. Thompson.

1814—37*th Session.*

Thomas S. Lester, Nathaniel Potter,
Jonathan S. Conklin.

1814-15—38*th Session.*

Tredwell Scudder, John Wells,
John P. Osborn.

1816—39*th Session.*

Phinehas Carll, Abraham Rose,
Benjamin F. Thompson.

1816-17—40*th Session.*

Israel Carl, Abraham Parsons,
Thomas S. Lester.

1818—41*st Session.*

Charles H. Havens, Nathaniel Miller,
John P. Osborn.

1819—42*d Session.*

John P. Osborn, Isaac Conklin,
Daniel Youngs.

1820—43*d Session.*

Charles H. Havens, Abraham Parsons,
Ebenezer W. Case.

1820-21—44*th Session.*

John M. Williamson, Isaac Conklin,
John P. Osborn.

1822—45*th Session.*

Tredwell Scudder, John M. Williamson,
Hugh Halsey.

1823—46*th Session.*

Samuel Strong, Joshua Fleet.

1824—47*th Session*

Hugh Halsey, Josiah Smith.

1825—48*th Session.*

Joshua Smith, David Hedges, Jr.

1826—49*th Session.*

John M. Williamson, Usher H. Moore.

1827—50*th Session.*

Samuel Strong, George L. Conklin.

1828—51*st Session.*

Tredwell Scudder, Abraham H. Gardiner.

1829—52*d Session.*

John M. Williamson, David Hedges, Jr.

1830—53*d Session.*

Samuel Strong, Noah Youngs.

1831—54*th Session.*

George S. Phillips, George L. Conklin.

1832—55*th Session.*

John M. Williamson, Samuel L' Hommedieu, Jr.

1833—56*th Session.*

David Hedges, Jr., William Wickes.

1834—57*th Session.*

William Sidney Smith, John Terry.

1835—58*th Session.*

George S. Phillips, George L. Conklin.

1836—59*th Session.*

Charles A. Floyd, Nathaniel Topping.

1837—60*th Session.*

John M. Williamson, Josiah C. Dayton.

1838—61*st Session.*

Charles A. Floyd, Sidney L. Griffin.

1839—62*d Session.*

Joshua B. Smith, J. Wickham Case.

1840—63*d Session.*

John M. Williamson, David Halsey.

1841—64*th Session.*

Josiah C. Dayton, Alanson Seaman.

1842—65*th Session.*

Benjamin F. Wells, Richard A. Udall.

1843—66*th Session.*

Samuel B. Nicoll, Joshua B. Smith,

1844—67*th Session.*

Richard W. Smith. Silas Horton.

1845—68*th Session.*

John H. Dayton, Darling B. Whitney.

1846—69*th Session.*

Samuel B. Gardiner, Richard A. Udall.

1847—70*th Session.*

Henry Landon, John L. Smith.

1848—71*st Session.*

1. Edwin Rose, 2. William S. Smith.

1849—72*d Session.*

1. Edwin Rose. 2. Nathaniel Miller.

1850—73*d Session.*

1. David Pierson, 2. Walter Scudder.

1851—74*th Session.*

1. Franklin Tuthill, 2. Egbert T. Smith.

1852—75*th Session.*

1. Henry P. Hedges, 2. Zopher B. Oakley.

SULLIVAN COUNTY.

1823—46*th Session.*
John Lindsley.

1824—47*th Session.*
Peter Miller.

1825—48*th Session.*
John Hall, Jr.

1826—49*th Session.*
Thomas Crary.

1827—50*th Session.*
Hiram Bennett.

1828—51*st Session.*
Alpheus Dimmick.

1829—52*d Session.*
John Lindsley.

1830—53*d Session.*
Herman M. Hardenburgh.

1831—54*th Session.*
James C. Cartes.

1832—55*th Session.*
Hiram Bennett.

1833—56*th Session.*
James C. Cartes.

1834—57*th Session.*
Anthony Hasbrouck.

1835—58*th Session.*
James Eldred.

1836—59*th Session.*
Samuel G. Dimmick.

1837—60*th Session.*
George S. Joscelyn.

1838—61*st Session.*

John H. Bowers.

1839—62*d Session.*

William F. Brodhead.

1840—63*d Session.*

Daniel B. St. John.

1841—64*th Session.*

William F. Brodhead.

1842—65*th Session.*

Matthew Brown.

1843—66*th Session.*

Jonathan Stratton.

1844—67*th Session.*

Amos Y. Grant.

1845—68*th Session.*

Harvey R. Morris.

1846—69*th Session.*

Richard Oliver.

1847—70*th Session.*

William B. Wright.

1848—71*st Session.*

James F. Bush.

1849—72*d Session.*

James F. Bush.

1850—73*d Session.*

James F. Bush.

1851—74*th Session.*

Jonathan Stratton.

1852—75*th Session.*

Elisha P. Strong.

TIOGA COUNTY.

1792—15*th Session.*

Jonathan Fitch.

1792-3—16*th Session.*

John Patterson.

1794—17*th Session.*

Vincent Matthews.

1795—18*th Session.*

Vincent Matthews.

1796—19*th Session.*

Emanuel Coryell.

1797—20*th Session.*

Emanuel Coryell.

1798—21*st Session.*

Emanuel Coryell, Benjamin Hovey.

1798-99—22*d Session.*

Matthew Carpenter.

1800—23*d Session.*

Samuel Frickham.

1800-01—24*th Session.*

Edward Edwards.

1802—25*th Session.*

Caleb Hyde.

1803—26*th Session.*

Caleb Hyde.

1804—27*th Session.*

Ashbel Wells.

1804-5—28*th Session.*

John Miller.

1806—29*th Session.*

John Miller.

1807—30*th Session.*

John Miller.

1808—31*st Session.*

Emanuel Coryell.

1808-9—32*d Session.*

Emanuel Coryell.

1810—33*d Session.*

Emanuel Coryell.

1811—34*th Session.*

Thomas Floyd.

1812—35*th Session.*

Henry Wells.

1812-13—36*th Session.*

Jabez Beers.

1814—37*th Session.*

Caleb Baker.

1814-15—38*th Session.*

Caleb Baker.

1816—39*th Session.*

Gamaliel H. Barstow

1816-17—40*th Session.*

Gamaliel H. Barstow.

1818—41*st Session.*

Gamaliel H. Barstow.

1819—42*d Session.*

Henry Wells.

1820—43*d Session.*

Hudson Jennings.

1820-21—44*th Session.*

Samuel Lawrence.

1822—45*th Session.*

Jared Patchin.

1823—46*th Session.*

Mathew Carpenter,	Benjamin Jennings.

1824—47*th Session.*

Grant B. Baldwin,	Gamaliel H. Barstow.

1825—48*th Session.*

Charles Pumpelly,	Samuel Winton.

1826—49*th Session.*

Isaac Baldwin,	Anson Camp.

1827—50*th Session.*

David Williams,	Gamaliel H. Barstow.

1828—51*st Session.*

William Maxwell,	Jacob Swartwood.

1829—52*d Session.*

Caleb Baker,	Samuel Baragar.

1830—53*d Session.*

John G. McDowell,	Wright Dunham.

1831—54*th Session.*

John G. McDowell,	David Williams.

1832—55*th Session.*

Nathaniel Smith,	Joel Tallmage, jun.

1833—56*th Session.*

Jacob Westlake,	Thomas Farrington.

1834—57*th Session.*

John R. Drake, George Gardner.

1835—58*th Session.*

George Fisher, Green Bennet..

1836—59*th Session.*

Elijah H. Goodwin, William H. Sutton.

1837—60*th Session.*

Ezra Canfield.

1838—61*st Session.*

John Coryell.

1839—62*d Session.*

Wright Dunham.

1840—63*d Session.*

Thomas Farrington.

1841—64*th Session.*

Washington Smith.

1842—65*th Session.*

John McQuigg.

1843—66*th Session.*

Simeon R. Griffin.

1844—67*th Session.*

Nathaniel W. Davis.

1845—68*th Session.*

Gideon O. Chase

1846—69*th Session.*

Gideon O. Chase.

1847—70*th Session.*

Charles R. Barstow.

1848—71*st Session.*

Erastus Goodrich.

1849—72*d Session.*

Ezra S. Sweet.

1850—73*d Session.*

Isaac Lott.

1851—74*th Session.*

James Ely.

1852—75*th Session.*

William Pierson.

TOMPKINS COUNTY.

1818—41*st Session.*

Samuel Crittenden.

1819—42*d Session.*

Samuel Crittenden, John Sutton.

1820—43*d Session.*

Joshua Philips, Herman Camp.

1820-21—44*th Session.*

Samuel Crittenden, Peter Hager.

1822—45*th Session.*

Peter Hager, 2d, Samuel Crittenden.

1823—46*th Session.*

Peter Hager, 2d, Jacob Conrad.

1824—47*th Session.*

Peter Hager, 2d, Nicholl Halsey.

1825—48*th Session.*

Joshua North, Jared Patchin.

1826—49*th Session.*

David Woodcock, Nathan Benson.

1827—50*th Session.*

Nathan Benson, John Sayler,
Benjamin Jennings.

1828—51*st Session.*

Amasa Dana, Josiah Hedden,
Samuel H. Dean.

1829—52*d Session.*

Amasa Dana, Samuel H. Dean,
Jonathan B. Gorman.

1830—53*d Session.*

Jonathan B. Gorman, Elijah Atwater,
Ebenezer Mack.

1831—54*th Session.*

John Ellis, Jehiel Ludlow.
John Sayler.

1832—55*th Session.*

Horace Mack, John Ellis,
John James Speed, Jr.

1833—56*th Session.*

Ira Tillotson, Thomas Bishop,
Daniel B. Swartwood.

1834—57*th Session.*

Charles Humphrey, Thomas B. Sears,
George B. Guinnip.

1835—58*th Session.*

Charles Humphrey, Caleb Woodbury,
Parvis A. Williams.

1836—59*th Session.*

Charles Humphrey, William R. Fitch,
George B. Guinnip.

1837—60*th Session.*

Benjamin Jennings, Lewis Halsey.

1838—61*st Session.*

Robert Swartwout, Elbert Curtis.

1839—62*d Session.*

Jesse McKinney, David Bower.

1840—63*d Session.*

Robert Swartwout, William H. L. Bogart.

1841 64*th Session.*

Levi Hubbell, Alpha H. Shaw.

1842—65*th Session.*

Charles Humphrey, Bernardus Swartwout.

1843—66*th Session.*

Sylvanus Larned, George I. Spink.

1844—67*th Session.*

Charles M. Turner, Peter Lounsbury.

1845—68*th Session.*

Lyman Strowbridge, Sherman Miller.

1846—69*th Session.*

James W. Montgomery, Henry S. Walbridge.

1847—70*th Session.*

Henry W. Sage, Samuel Lawrence.

1848—71*st Session.*

1. John Jessup, 2 Alpheus West.

1849—72*d Session.*

1. Darius Hall, 2. Charles J. Rounseville.

1850—73d *Session.*

1. Henry Brewer, 2. Elias W. Cady.

1851—74*th* *Session.*

1. Alexander Graham, 2. Benjamin G. Ferris.

1852—75*th* *Session.*

1. Alvah Hurlburt, 2. Stephen B. Cushing.

ULSTER COUNTY.

1777—1*st* *Session.*

Johannis G. Hardenburgh, Cornelius C. Schoonmaker,
John Cantine, Henry Wisner, Jun.,
Johannis Snyder, Mathew Rea.

1778—2*d* *Session.*

Johannis Snyder, Cornelius C. Schoonmaker.

1779—3*d* *Session.*

Cornelius C. Schoonmaker, Johannis Cantine.
Nathan Smith, Thomas Palmer,
Johannis C. Hardenburgh, Robert Boyd, jun.,

1780-81—4*th* *Session.*

See note to Albany county.

1781-2—5*th* *Session.*

Charles DeWitt, Abraham Hasbrouck,
Johannis Bruyn, James Hunter,
Johannis Hardenburgh.

1782-3—6*th* *Session.*

James Hunter, John Bruyn,
Charles DeWitt, Cornelius Schoonmaker,
John Nicholson, William Malcolm.

1784—7*th* *Session.*

Charles DeWitt,
John Cantine,
Cornelius C. Schoonmaker,
James Hunter,
John Nicholson,
Nathan Smith,

1784-5—8*th* *Session.*

John Cantine,
Charles DeWitt,
Nathan Smith,
John Nicholson,
Cornelius C. Schoonmaker,
Johannis C. Hardenbergh.

1786—9*th* *Session.*

Nathan Smith,
David Galatian,
Thomas Jansen,
Cornelius Schoonmaker,
Joseph Hasbrouck,
Johannis Snyder,

1787—10*th* *Session.*

Cornelius Schoonmaker,
Nathan Smith,
David Galatian,
Johannis Snyder,
Ebenezer Clark,
John Cantine.

1788—11*th* *Session.*

John Cantine,
Cornelius C. Schoomaker,
Charles DeWitt,
James Clinton,
Nathan Smith,
James Bruyn,

1788-9—12*th* *Session.*

John Cantine,
Johannis G. Hardenbergh,
Nathan Smith,
Christopher Tappan,
Cornelius C. Schoonmaker,
Ebenezer Clark.

1789-90—13*th* *Session.*

Christopher Tappan,
Cornelius C. Schoonmaker,
Ebenezer Clark,
Nathan Smith,
Johannis G. Hardenbergh,
Severyn T. Bruyn.

1791—14*th* *Session.*

Jacob Delametter,
James G. Graham,
Joseph Hasbrouck,
James Hunter,
Mathew Du Bois,
Johannis Snyder.

1792—15*th Session.*

Ebenezer Clark,
Joseph Hasbrouck,
Jacob Delameter,
Ebenezer Foote.

1792-93—16*th Session.*

Philip D. Bevier,
Nathan Smith,
John C. DeWitt,
Severyn T. Bruyn,
John Addison.

1794—17*th Session.*

Ebenezer Foote,
Cornelius Bruyn,
Conradt E. Elmendorf,
Johannis Miller.
James Oliver.

1795—18*th Session.*

Jacob W. Tremper,
John C. DeWitt,
Severyn T. Bruyn.
Cornelius E. Schoonmaker.
Andrew McCord.

1796—19*th Session.*

James Oliver,
Philip D. Bevier,
John Addison,
Ebenezer Foote.
Andrew McCord.

1797—20*th Session.*

Ebenezer Foote,
James Oliver,
Benjamin Sears,
Francis Crawford,
John Burr,
John C. DeWitt,
Johannis Bruyn,
Josiah Hasbrouck.

1798—21*st Session.*

Philip D. Bevier,
Jacobus S. Bruyn,
John A. DeWitt,
John C. DeWitt,
Phineas Bowman,
John Barber,
Andrew McCord.

1798-99—22*d Session.*

John A. De Witt,
Jacobus S. Bruyn,
Peter Lefevre, Jr.,
Gerret Abeel,
Martin G. Schuneman.

1800—23d *Session.*

Moses Cantine,
Johannis Bruyn,
Charles W. Broadhead,
Martin G. Schuneman,
John C. De Witt.

1800-1—24*th* *Session.*

Conrad Ed. Elmendorf,
Benjamin Bevier,
Joseph Hasbrouck, Jr.,
Philip Eltinge.

1802—25*th* *Session.*

Josiah Hasbrouck,
Benjamin Bevier,
Benjamin Snyder,
Elnathan Lears.

1803—26*th* *Session.*

Elnathan Lears,
James Kain,
Moses Cantine, Jr.,
Cornelius Low.

1804—27*th* *Session.*

Lucas Elmendorf,
Joseph Hasbrouck, Jr.,
James Ross,
Benjamin Bevier.

1804-5—28*th* *Session.*

Lucas Elmendorf,
James Ross,
Selah Tuthill,
Henry Reynolds.

1806—29*th* *Session.*

John Lounsbery,
Peter P. Roosa,
Josiah Hasbrouck,
Elnathan Sears.

1807—30*th* *Session.*

Peter P. Roosa,
John Conklin,
Jacob Marius Green,
Jacob Rea.

1808—31*st* *Session.*

Cornelius Louw,
Abraham Ten Eyck De Witt,
Isaac Lefever,
Conrad Edmund Elmendorf.

1808-9—32*d* *Session.*

Cornelius Lonw,
William Swart,
Joshua Dumond,
Peter Lefevre.

1810—33d *Session.*

Abraham Hasbrouck,
Abraham Hardenbergh,
Benjamin Bevier,
John Conklin.

1811—34*th* *Session.*

Samuel Hawkins,
John Lounsbery,
Nehemiah L. Smith,
John Conklin.

1812—35*th* *Session.*

Henry Jansen,
Jacob Coddington,
Abraham J. Hardenbergh,
Elnathan Sears.

1812-13—36*th* *Session.*

Henry Jansen,
Abraham I. Hardenbergh,
Jacob Coddington,
Elnathen Sears.

1814—37*th* *Session.*

John Kiersted,
Green Miller,
Coenrad Bevier,
Daniel Clark.

1814-15—38*th* *Session.*

Thomas Van Gaasbeck,
Wessel Broadhead,
David Staples,
Darius Martin.

1816—39*th* *Session.*

William Parks,
Green Miller,
Aaron Adams,
Dirck Westbrook.

1816-17—40*th* *Session.*

Peter A. Cantine,
Green Miller,
John Conklin,
Christopher Tappen.

1818—41*st* *Session.*

David Staples,
Samuel Smith,
William Doll,
Levi Jansen.

1819—42*d* *Session.*

John Crispell,
Elisha Ostrander,
Joseph Deyo,
Daniel Clark.

1820—43*d Session.*

Charles H. Ruggles,
Isaac Elting,
Joseph Deyo,
Jacob Snyder.

1820-21—44*th Session.*

William Gillespie,
Wells Lake,
Jacob Snyder,
Coenrad Bevier.

1822—45*th Session.*

John Broadhead, Jr.,
Charles Bruyn,
Jacob I. Hasbrouck,
William A. Stokes.

1823—46*th Session.*

John Jansen,
Solomon Sahler,
Wells Lake.

1824—47*th Session.*

John C. Tillotson,
Joseph Jansen,
James C. De Witt.

1825—48*th Session.*

James Cockburn,
Jacob J. Hasbrouck,
Jacobus Hardenburgh.

1826—49*th Session.*

John Lounsbery,
James T. Ellmore,
Charles Bruyn.

1827—50*th Session.*

Jacob Trumpbour,
Jasper Cropsey.

1828—51*st Session.*

Thomas H. Jansen,
Jacob I Schoonmaker.

1829—52*d Session.*

Abraham D. Soper,
Lodewyck Hornbeck.

1830—53*d Session.*

Matthew Oliver,
Green Miller.

1831—54*th Session.*

John J. Schoonmaker, John Van Buren.

1832—55*th Session.*

Leonard Hardenbergh, Heman Landon.

1833—56*th Session.*

Joseph Jansen. Gordon Craig.

1834—57*th Session.*

Samuel Culver, Daniel Le Fever.

1835—58*th Session.*

Henry I. Davis, William Woodworth.

1836—59*th Session.*

Herman M. Romayne, Jacob Chambers.

1837—60*th Session.*

Samuel Elmore, Ephraim E. Depuy.

1838—61*st Session.*

Benjamin B. Bevier, James N. Mitchell.

1839—62*d Session.*

Jacob H. Dewitt, Henry C. Hornbeck.

1840—63*d Session.*

John V. L. Overbagh, David L. Bernard.

1841—64*th Session.*

George G. Graham, Conrad Brodhead.

1842—65*th Session.*

Jeremiah Russell, Abraham Jansen.

1843—66*th Session.*

William Soper, Edmond Suydam.

1844—67*th Session.*

Samuel Reynolds, Abraham D. Bevier.

1845—68*th Session.*

Irwin Pardee,	Reuben H. Hine.

1846—69*th Session.*

Charles Drake,	Joseph W. Low.

1847—70*th Session.*

Jacob H. De Witt,	John D. L. Montanye.

1848—71*st Session.*

1. George A. Gay,	2. Job G. Ellmore.

1849—72*d Session.*

1. Peter Crispell, Jr.,	2. James G. Graham.

1850—73*d Session.*

1. Milton Sheldon,	2. John P. Davis.

1851—74*th Session.*

1. William F. Russell,	2. John P. Davis.

1852—75*th Session.*

1. Jacob S. Freer,	2. Jacob Westbrook, Jr.

WARREN COUNTY.

1823—46*th Session.*

William McDonald.

1824—47*th Session.*

Dudley Farlin.

1825—48*th Session.*

William Cook.

1826—49*th Session.*

Norman Fox.

1827—50*th Session.*

William Hay, jr.

1828—51*st Session.*

Truman B. Hicks.

1829—52*d Session.*

William McDonald.

1830—53*d Session.*

Norman Fox.

1831—54*th Session.*

Samuel Stackhouse.

1832—55*th Session.*

Allen Anderson.

1833—56*th Session.*

Nicholas Roosevelt, jr.

1834—57*th Session.*

Thomas Archibald.

1835—58*th Session.*

Truman B. Hicks.

1836—59*th Session.*

William Griffing.

1837—60*th Session.*

Walter Geer jr.,

1838—61*st Session.*

Thomas A. Leggett.

1839—62*d Session.*

William Griffing.

1840—63*d Session.*

Joseph Russell.

1841—64*th Session.*
George Sanford.

1842—65*th Session.*
Benjamin P. Burhans.

1843—66*th Session.*
Pelatiah Richards.

1844—67*th Session.*
John F. Sherrill.

1845—68*th Session.*
James Cameron.

1846—69*th Session.*
Winfield S. Sherwood.

1847—70*th Session.*
John Hodgson, 2d.

1848—71*st Session.*
Albert Cheney.

1849—72*d Session.*
Reuben Wells.

1850—73*d Session.*
Cyrus Burnham.

1851—74*th Session.*
David Noble, 2d.

1852—75*th Session.*
George Richards.

CUMBERLAND COUNTY.

1779—3*d Session.*

Micah Townsend,	Elkanah Day,

John Sessions.

4, 5, & 6 *Blank.*

William Shuttuck,
Joel Biglo,
Elijah Proughty.

WASHINGTON COUNTY—(*Formerly Charlotte.*)

CHARLOTTE COUNTY.

1777—1*st Session.*

Ebenezer Russell,
Ebenezer Clarke,
John Bowen,
John Barns.

1778—2*d Session.*

Albert Baker.

1779-80—3*d Session.*

(No returns.)

1780-1—4*th Session.*

[See note to Albany county.]

1781-82—5*th Session.*

Hamilton McCollister,
David Hopkins,
John Williams,
Mathew McWhorter.

1782-83—8*th Session.*

Joseph McCracken,
Hamilton McCollister,
David Hopkins,
Benjamin Baker.

1784—7*th Session.*

David Hopkins,
Ebenezer Russell,
Hamilton McCollister,
Edward Savage.

Name changed to WASHINGTON.

1784-5—8*th Session.*

Albert Baker,
David Hopkins,
Edward Savage,
Adiel Sherwood.

1786—*9th Session.*

Albert Baker,
Joseph McCracken,
Ichabod Parker,
Peter B. Tierce.

1787—*10th Session.*

Edward Savage,
Adam Martin,
Peter B. Tierce,
Ichabod Parker.

1788—*11th Session.*

Alexander Webster,
Albert Baker,
Peter B. Tierce,
Edward Savage.

1788-9—*12th Session.*

Edward Savage,
Alexander Webster,
Peter B. Tierce,
Joseph McCracken.

1789-90—*13th Session.*

Thomas Converse,
Zina Hitchcock,
Nathan Morgan,
John Rowan,

1791—*14th Session.*

Zina Hitchcock,
Thomas Converse,
John Rowan,
Daniel Curtis,

1792—*15th Session.*

Thomas Converse,
John Conger,
Daniel Hopkins,
Zina Hitchcock.

WASHINGTON AND CLINTON COUNTIES.

1792-3—*16th Session.*

Stanton Tifft,
Zina Hitchcock,
Daniel Cartice,
David Hopkins,

1794—*17th Session.*

David Thomas,
Philip Smith,
Benjamin Colvin,
William Whiteside.

1795—*18th Session.*

Edward Savage,
Samuel Beman,
Benjamin Colvin,
David Hopkins.

1796—19*th Session.*

Timothy Leonard,
Edward Savage,
David Hopkins,
Thomas Smith.

1797—20*th Session.*

Andrew White,
Daniel Mason,
Timothy Leonard,
Anthony I. Blanchard,
Gerrit G. Lansing,
Edward Savage.

1798—21*st Session.*

Melancton Wheeler,
Edward Savage,
Daniel Mason,
Thomas Smith,
Charles Kane,
Reuben Pride.

1798-99—22*d Session*

David Hopkins,
Edward Savage,
Seth Crocker,
David Thomas,
Phillip Smith,
Charles Kane.

1800—23*d Session.*

Edward Savage,
Micajah Pettit,
Benjamin Colvin,
John Thurman,
David Thomas,
Isaac Sargent.

1800-01—24*th Session.*

Edward Savage,
Timothy Leonard,
David Hopkins,
William McAuley,
Seth Alden,
Gerret G. Lansing.

1802—25*th Session.*

John McLean,
Isaac Sargent,
Micajah Pettit,
Jason Kellogg,
Alexander Cowan,
Kitchel Bishop,

1803—26*th Session.*

Isaac Sargent,
John McLean,
Alexander Cowan,
Jason Kellogg,
Kitchel Bishop,
David Austin.

1804—27*th Session.*

John McLean,
Kitchell Bishop,
Stephen Thorn,
William Livingston,
David Austin,
John McKinney.

WASHINGTON COUNTY.

1804-05—28*th Session.*

John McLean,
William Livingston,
Jason Kellogg,
Isaac Harlon,
James Starbuck,
Solomon Smith.

1806—29*th Session.*

John McLean,
William Livingston,
Isaac Sargent,
Kitchel Bishop,
Daniel Shepherd,
Nathaniel Pitcher.

1807—30*th Session.*

Kitchel Bishop,
Jason Kellogg,
John Craig,
William Robards,
Peleg Bragg,
James Hill.

1808—31*st Session.*

Thomas Cornell,
Lyman Hall,
Kitchel Bishop,
Henry Mattison,
Gideon Taft,
James Hill.

1808-9—32*d Session.*

Kitchel Bishop,
Roger Skinner,
Reuben Whallen,
James Hill.
Alexander Livingston.

1810—33*d Session.*

William Livingston,
John Gale,
Kitchel Bishop,
Jason Kellogg.
Roger Skinner.

1811—34*th Session.*

Reuben Whallen,
Isaac Sargent,
David Woods,
John Richards,
John Baker.

1812—35*th Session.*

Alexander Livingston,
James Hill,
John Kirtland,
Halsey Rogers.
Lyman Hall.

1812-13—36*th Session.*

John Beebe,
Melancton Wheeler,
Francis McLean,
Jason Kellogg.
Eleazer Russell.

WASHINGTON AND WARREN COUNTIES

1814—37*th Session.*

John Savage,
John Richards,
Samuel Gordon,
Paul Dennis,
Charles Starbuck.

1814-15—38*th Session.*

Isaac Sargent,
Nathaniel Pitcher,
Henry Mattison,
John Richards,
John Gale.

1816—39*th Session.*

Michael Harris,
John Reid,
Roswell Weston,
James Stevenson,
David Russel.

1816-17—40*th Session.*

William Cook,
Nathaniel Pitcher,
John Gale,
Isaac Sargent,
David Woods.

1818—41*st Session.*

Isaac Sargent,
Duncan Cameron,
Alexander Livingston,
John McLean,
Jason Kellogg.

1819—42*d Session.*

John Gale,
William M. McFarlane,
John Doty,
William K. Adams,
Norman Fox.

1820—43*d Session.*

James Hill,
John Kirtland,
David Austen,
Norman Fox,
Peleg Bragg.

1820-21—44*th Session.*

William Richards,
James Mallory,
Wadsworth Bull,
James L. Thurman,
John Moss.

1822—45*th Session.*

John Baker,
James Tefft,
Silas D. Kellogg,
William McDonald,
Duncan Cameron.

WASHINGTON COUNTY.

1823—46*th Session.*

Martin Lee,
John King,
Timothy Eddy,
James McNaughton.

1824—47*th Session.*

Silas D. Kellogg,
Ezra Smith,
John Crary,
David Campbell.

1825—48*th Session.*

Lemuel Hastings,
Samuel Stevens,
Ezra Smith,
David Campbell.

1826—49*th Session.*

James Stevenson,
Hiram Cole,
Israel Williams,
David Woods.

1827—50*th Session.*

Samuel Stevens,
Peter J. H. Myers,
John McDonald.

1828—51*st Session.*

Jonathan Mosher,
Henry Whiteside,
Henry Thorn.

1829—52*d Session.*

John McDonald, Richard Sill,
Robert McNeil.

1830—53*d Session.*

Robert Wilcox, David Russell,
David Sill.

1831—54*th Session.*

William Townsend, Henry Thorn,
George W. Jermain.

1832—55*th Session.*

James Stevenson, Isaac W. Bishop,
John McDonald.

1833—56*th Session.*

David Russell, Walter Cornell,
Charles Rogers.

1834—57*th Session.*

Melancton Wheeler, James Wright,
Charles F. Ingalls.

1835—58*th Session.*

George Mckie, Allen R Moore,
Jonathan K. Horton.

1836—59*th Session.*

Stephen L. Viele. Alexander Robertson.
Aaron Barker.

1837—60*th Session.*

Charles Rogers, Joseph W. Richards.

1838—61*st Session.*

Leonard Gibbs, Erastus D. Culver

1839—62*d Session.*

Jesse S. Leigh, Salmon Axtel.

1840—63*d* *Session.*

John H. Boyd,	Anderson Simpson.

1841—64*th* *Session.*

Reuben Skinner,	Erastus D. Culver.

1842—65*th* *Session.*

D. S. Wright,	James McKie, Jr.

1843—66*th* *Session.*

James W. Porter,	Anson Biglow.

1844—67*th* *Session.*

John W. Proudfit,	John Barker.

1845—68*th* *Session.*

John Stevenson,	James Rice.

1846—69*th* *Session.*

Lodowecus S. Viele,	James M. Foster.

1847—70*th* *Session.*

Samuel McDoual,	Adolphus F. Hitchcock.

1848—71*st* *Session.*

1. Benjamin Crocker,	2. Elisha Martin.

1849—72*d* *Session.*

1. Le Roy Mowry.	2. Alexander Robertson.

1850—73*d* *Session.*

1. David Sill,	2. Calvin Pease.

1851—74*th* *Session.*

1. Thomas C. Whiteside.	2. James Farr.

1852—75*th* *Session.*

1. Elisha Billings,	2. David Wilson.

WAYNE COUNTY.

1824—47*th Session.*

Russell Whipple, James Dickson.

1825—48*th Session.*

William H. Adams, Enoch Morse.

1826—49*th Session.*

Ambrose Hall, John L. Kipp,

1827—50*th Session.*

Thomas Armstrong, Jonathan Boynton

1828—51*st Session.*

Luther Filmore, Thomas Armstrong.

1829—52*d Session.*

Thomas Armstrong, Jonathan Boynton.

1830—53*d Session.*

Seth Eddy, Luther Chapin.

1831—54*th Session.*

Seth Eddy, Ananias Wells.

1832—55*th Session.*

Ambrose Salisbury. James Humeston,

1833—56*th Session.*

Ambrose Salisbury, James Humeston.

1834—57*th Session.*

James P. Bartle, Russell Whipple.

1835—58*th Session.*

William D. Wylie, Elisha Benjamin.

1836—59*th Session.*

Reuben H. Foster, Robert Alsop.

1837—60*th Session.*

Pomeroy Tucker, David Arne, jun.

1838—61*st Session.*

John M. Holley, Esbon Blackman.

1839—62*d Session.*

Ambrose Salisbury, Themas Armstrong,

1840—63*d Session.*

Horace Morley, Durfee Osband.

1841—64*th Session.*

John M. Holley, Esbon Blackman.

1842—65*th Session.*

Theron R. Strong, James M. Wilson.

1843—66*th Session.*

Philip Lours, Frederick U. Sheffield.

1844—67*th Session.*

Austin Roe Isaac R. Sanford.

1845—68*th Session.*

Alanson M. Knapp, John J. Dickson.

1846—69*th Session.*

Elias Durfee, James T. Wisner.

1847—70*th Session.*

Israel B. Southard, Samuel Moore.

1848—71*st Session.*

1. Eliada Pettit, 2. John Lapham.

1849—72*d Session.*

1. Isaac Leavenworth, 2. Peter Boyce.

1850—73*d Session.*

1. James M. Wilson, 2. Elihu Durfee.

1851—74*th Session.*

1. Edward W. Bottum, 2. Theron G. Yeomans.

1852—75*th* *Session.*

1. William Dutton, 2. Theron G. Yeomans.

WESTCHESTER COUNTY.

1777—1*st* *Session.*

Governeur Morris,
Zebediah Mills,
Robert Graham,
Thaddeus Crane,
Israel Honeywell, Jr.,
Samuel Drake.

1778—2*d* *Session.*

Zebediah Mills,
Thaddeus Crane,
Joseph Benedict,
Stephen Ward,
Ebenezer Lockwood.

1779—3*d* *Session.*

Philip Pell, Jr.,
Zebediah Mills,
Samuel Drake,
Ebenezer Purdy,
Abijah Gilbert,
William Paulding.

1780-81—4*th* *Session.*

[See note to Albany county.]

1781-82—5*th* *Session.*

Zebediah Mills,
Thomas Thomas,
Abijah Gilbert,
Jonathan G. Tompkins,
Nathaniel Delivan,
Nathan Rockwell.

1782-83—6*th* *Session.*

Samuel Haight,
Ebenezer Purdy,
Zebediah Mills,
John Lawrence,
Abijah Gilbert,
Thomas Thomas.

1783-84—7*th* *Session.*

Philip Pell, Jr.,
Thomas Thomas,
Abijah Gilbert,
Ebenezer Purdy,
Ebenezer Lockwood,
Ebenezer S. Burling.

1784-85—8*th Session.*

Thomas Thomas,
Abijah Gilbert,
Zebediah Mills,
Ebenezer Purdy,
Samuel Haight,
Philip Pell.

1786—9*th Session.*

Philip Pell, Jr.,
Thomas Thomas,
Ebenezer Lockwood,
Samuel Drake,
John C. Tompkins,
Abijah Gilbert.

1787—10*th Session.*

Thomas Thomas,
Ebenezer Lockwood,
Joseph Strang,
Ebenezer Purdy,
Nathan Rockwell,
Jonathan G. Tompkins.

1788—11*th Session.*

Ebenezer Lockwood,
Thomas Thomas,
Joseph Strang,
Jonathan G. Tompkins,
Abijah Gilbert,
Samuel Drake.

1788-89—12*th Session.*

Philip Van Cortlandt,
Nathan Rockwell,
Walter Seaman,
Philip Livingston,
Thaddeus Crane,
Jonathan Horton.

1789-90—13*th Session.*

Philip Van Cortland,
Joseph Brown,
Nathan Rockwell,
Walter Seaman,
Samuel Haight,
Jonathan Horton.

1791—14*th Session.*

Samuel Haight,
Ebenezer Purdy,
Abijah Gilbert,
Peter Fleming,
Jonathan Horton,
Jonathan G. Tompkins.

1792—15*th Session.*

Pierre Van Cortlandt, Jr.,
Jonathan G. Tompkins,
Samuel Haight,
Ebenezer Purdy,
Elias Newman.

1793—16*th Session.*

Hezekiah Brown, Richard Hatfield,
? ?

1794—17*th Session.*

Pierre Van Cortland, Jr., Elias Newman,
Richard Hatfield, Abel Smith,
Ebenezer White.

1795—18*th Session.*

Abel Smith, Ebenezer White,
Pierre Van Cortlandt, Jr., Ebenezer Purdy,
Thomas Bowne.

1796—19*th Session.*

Elias Newman, Mordecai Hall,
Joseph Carpenter, Charles Teed,
Abel Smith.

1797—20*th Session.*

Charles Teed, Mordecai Hall,
Samuel Youngs, Joseph Carpenter,
John Barker.

1798—21*st Session.*

Abel Smith, Charles Teed,
Elijah Lee, William Adams.
John Barker.

1798-99—22*d Session.*

Abel Smith, Elijah Lee,
Charles Teed, William Adams.
Israel Honeywell.

1800—23*d Session.*

Abel Smith, Charles Teed,
Nathan Rockwell, Abijah Gilbert,
George Comb.

1800-1—24*th Session.*

Abel Smith, Thomas Thomas,
Abraham Odell, Abijah Gilbert,
Robert Graham.

1802—25*th Session.*

Abel Smith, Thomas Thomas,
Abijah Gilbert, Joseph Travis,
Abraham Odell.

1803—26*th Session.*

Joseph Travis, Abijah Gilbert,
Abraham Odell, Thomas Thomas.

1804—27*th Session.*

Abraham Odell, Thomas Thomas,
Abijah Gilbert, Joseph Travis.

1804-5—28*th Session.*

Abijah Gilbert, Joseph Travis,
Abraham Odell, Caleb Tompkins.

1806—29*th Session.*

Joel Frost, Ezra Lockwood,
Caleb Tompkins, Philip Honeywell.

1807—30*th Session.*

William Barker, Abraham Odell,
Benjamin Isaacs, Samuel Marvin.

1808—31*st Session.*

Benjamin Ferris, Abraham Miller,
Joel Frost, Ozias Osburn.

1808-9—32*d Session.*

William Barker, Abraham Odell,
Samuel Youngs

1810—33*d Session.*

William Barker, Samuel Youngs,
Abraham Odell.

1811—34*th Session.*

Abraham Miller, Darius Crosby,
Jacob Odell.

1812—35*th Session.*

Abraham Miller, Darius Crosby,
Jacob Odell.

1812-13—36*th Session.*

William Barker, Abraham Miller.

1814—37*th Session.*

William Barker, Abraham Miller,
Richard Valentine Morris.

1814-15—38*th Session.*

Benjamin Isaacs, William ReQua,
Peter J. Munro.

1816—39*th Session.*

Benjamin Isaacs, William ReQua,
Abraham Miller.

1816-17—40*th Session.*

John Townsend, Abraham Miller,
Ebenezer White, jun.

1818—41*st Session.*

Benjamin Isaacs, William ReQua,
William Barker.

1819—42*d Session.*

James Guion, William ReQua,
William Barker.

1820—43*d Session.*

Abraham Miller, William Nelson,
James Guion.

1820-21—44*th Session.*

Abraham Miller, William Nelson,
James Guion.

1822—45*th Session.*

Joseph Hunt, Enoch Tompkins,
Thomas Smith.

1823—46*th Session.*

Thomas Smith, Nehemiah Brown, jun.,
St. John Constant.

1824—47*th Session.*

Nehemiah Brown, jun., Niles Frost,
Benjamin Ferris.

1825—48*th Session.*

Josph Scofield, Thaddeus Crane,
Jeremiah Anderson.

1826—49*th Session.*

Joseph Scofield, John H. Smith,
James Wyley.

1827—50*th Session.*

Joseph Scofield, Nathaniel Montross,
John Fisher.

1828—51*st Session.*

Nathaniel Montross, James Turk,
John Fisher.

1829—52*d Session.*

Aaron Brown, Lawrence Davenport,
Abel Smith.

1830—53*d Session.*

Aaron Brown, Lawrence Davenport.
Abel Smith.

1831—54*th Session*.

Aaron Vark, Thomas Murphy,
St. John Constant.

1832—55*th Session*.

Israel H. Watson, Thomas Smith,
John M. Frost.

1833—56*th Session*.

Israel H. Watson, Horatio Lockwood,
Joseph H. Anderson.

1834—57*th Session*.

Horatio Lockwood, Edwin Crosby,
Joseph H. Anderson.

1835—58*th Session*.

Horatio Lockwood, Prince W. Paddock,
Edwin Crosby.

1836—59*th Session*.

Prince W. Paddock, William Fisher,
Horatio Lockwood.

1837—60*th Session*.

Wiliam Fisher, Barnardus Montross.

1838—61*st Session*.

Nicholas Cruger, Francis Barretto.

1839—62*d Session*.

Samuel B. Ferris, Joseph Strang.

1840—63*d Session*.

Samuel B. Ferris, Joseph Strang.

1841—64*th Session*.

Horatio Lockwood, Joseph T. Carpenter.

1842—65*th* *Session.*

Horatio Lockwood,	Joseph T. Carpenter.

1843—66*th* *Session.*

Andrew Findley,	Samuel L. Holmes.

1844—67*th* *Session.*

Andrew Findley,	Charles Wright.

1845—68*th* *Session.*

I. Anthony Constant,	Thomas R. Lee.

1846—69*th* *Session.*

Ezra Marshall,	John R. Hayward.

1847—70*th* *Session.*

James E. Beers,	Ezra Marshall.

1848—71*st* *Session.*

1. Richard M. Underhill,	2. Jared V. Peck.

1849—72*d* *Session.*

1. William H. Robertson,	2. Harvey Kidd.

1850—73*d* *Session.*

1. William H. Robertson,	2. Jesse Lyon.

1851—74*th* *Session.*

1. Daniel Clark Briggs,	2. Theodore H. Benedict.

1852—75*th* *Session.*

1. George W. Lyon,	2. Abraham Hatfield.

WYOMING COUNTY.

1842—65*th* *Session.*

John W. Brownson,	Eleazer Baldwin.

1843—66*th* *Session.*

Eleazer Baldwin,	Truman Benedict.

1844—67*th* *Session.*

Truman Benedict, Leverett Spring.

1845—68*th* *Session.*

Leverett Spring, Andrew W. Young.

1846—69*th* *Session.*

Andrew W. Young, Arden Woodruff.

1847—70*th* *Session.*

Arden Woodruff.

1848—71*st* *Session.*

Paul Richards.

1849—72*d* *Session.*

Paul Richards.

1850—73*d* *Session.*

James Sprague.

1851—74*th* *Session.*

Wolcott J. Humphrey.

1852—75*th* *Session.*

Wolcott J. Humphrey.

YATES COUNTY.

1824—47*th* *Session.*

Aaron Remer.

1825—48*th* *Session.*

Philip Robinson.

1826—49*th Session.*

Avery Smith.

1827—50*th Session.*

James C. Robinson.

1828—51*st Session.*

Morris T. Shepherd.

1829—52*d Session.*

Morris T. Shepherd.

1830—53*d Session.*

Morris T. Shepherd.

1831—54*th Session.*

Aaron Remer.

1832—55*th Session.*

Aaron Remer.

1833—56*th Session.*

Joshua Lee.

1834—57*th Session.*

James P. Robinson.

1835—58*th Session.*

Meredith Mallory.

1836—59*th Session.*

Mordecai Ogden.

1837—60*th Session.*

Mordecai Ogden.

1838—61*st Session.*

Miles Benham.

1839—62*d Session.*

Miles Benham.

1840—63*d Session.*

Samuel S. Ellsworth.

1841—64*th Session.*

Heman Chapman.

1842—65*th Session.*

Henry Spence.

1843—66*th Session.*

Richard H. Williams.

1844—67*th Session.*

Thomas Semans.

1845—68*th Session.*

Ezekiel Casner.

1846—69*th Session.*

George W. Wolcott.

1847—70*th Session.*

Nehemiah Raplee.

1848—71*st Session.*

Hatley N. Dox.

1849—72*d Session.*

John Wisewell.

1850—73*d Session.*

Melatiah H. Lawrence.

1851—74*th Session*.

Samuel Jayne, jr.

1852—75*th Session*.

Charles S. Hoyt.

II. TABLE

Showing the birth-place, the foreign country of the last foreign born progenitors, the occupation, and the average age and weight of the Representatives in the Assembly of the State of New-York, from the several counties of the said State.

ALBANY COUNTY.

BIRTH PLACE.		ANCESTORS.				Occupation.		Weight.		Age.	
		Paternal.		Maternal.							
New-York,	26	England,	17	England,	15	Farmers,	14	Heaviest,	225	Oldest,	57
Massachusetts,	2	Holland,	7	Holland,	5	Lawyers,	10	Lightest,	125	Youngest,	24
Ireland,	2	Germany,	3	Germany,	3	Merchants,	4	Average,	159	Average,	39
		Ireland,	2	Ireland,	3	Physicians,	2				
		Wales,	1	Scotland,	4						

ALLEGANY COUNTY.

BIRTH PLACE.		Paternal.		Maternal.		Occupation.		Weight.		Age.	
New-York,	6	England,	15	England,	15	Farmers,	8	Heaviest,	196	Oldest,	59
Vermont,	6	Scotland,	1	Scotland,	1	Lawyers,	4	Lightest,	125	Youngest,	29
Connecticut,	1					Merchants,	2	Average,	148	Average	42
New Jersey,	2					Physicians,	2				
Pennsylvania,	1										

BROOME COUNTY

BIRTH PLACE.		Paternal.		Maternal.		Occupation.		Weight.		Age.	
New-York,	4	England,	7	England,	5	Farmers,	4	Heaviest,	215	Oldest,	57
Massachusetts,	1	Ireland,	1	Ireland,	1	Merchants,	2	Lightest,	120	Youngest,	31
Connecticut,	2			Germany,	2	Mechanic,	1	Average,	173	Average,	41
Vermont,	1					Physician,	1				

CATTARAUGUS COUNTY.

BIRTH PLACE.		Paternal.		Maternal.		Occupation.		Weight.		Age.	
New-York,	9	England,	18	England,	9	Farmers,	8	Heaviest,	180	Oldest,	56
Massachusetts,	1	Ireland,	2	Ireland,	1	Lawyers,	3	Lightest,	128	Youngest,	28
Vermont,	4	Scotland,	1	Scotland,	4	Physicians,	1	Average,	158	Average,	41
Connecticut,	1			Wales,	2	Merchants,	4				
Scotland,	1										

II. TABLE—(CONTINUED.)

CAYUGA COUNTY.

BIRTH PLACE.		ANCESTORS.				Occupation.		Weight.		Age.	
		Paternal.		Maternal.							
New-York,...........	20	England,........	12	England,........	17	Farmers,........	16	Heaviest, ...	200	Oldest,............	54
Vermont, ...	1	Ireland,.........	4	Ireland,.........	3	Merchant,.......	1	Lightest,.........	115	Youngest,.........	34
Massachusetts,.......	1	Scotland,........	4	France,.........	2	Lawyers,........	4	Average,.........	158	Average,..........	43
Ireland, ...	2	Holland, ...	3	Holland, ...	2	Mechanic,.......	1				
		Wales,..........	1			Physician,.......	1				
						Manufacturer,...	1				

CHAUTAUQUE COUNTY.

BIRTH PLACE.		Paternal.		Maternal.		Occupation.		Weight.		Age.	
New-York,...........	12	England,........	14	England,........	17	Farmers,........	7	Heaviest, ...	215	Oldest.............	57
Connecticut,.........	2	Wales,..........	2	Scotland,........	1	Lawyers,........	7	Lightest,.........	135	Youngest..........	33
Vermont, ...	4	Scotland,........	1			Physician,.......	1	Average,.........	169	Average,..........	44½
		Holland,........	1			Merchants,......	2				
						Mechanic,.......	1				

CHEMUNG COUNTY.

BIRTH PLACE.		Paternal.		Maternal.		Occupation.		Weight.		Age.	
New-York,...........	6	England,........	2	England,........	4	Farmers,........	6	Heaviest,........	175	Oldest,............	52
Connecticut,..........	1	Scotland,........	2	France,.........	1	Lawyers,........	1	Lightest,........	125	Youngest,.........	34
Pennsylvania, ...	1	Wales,..........	1	Holland, ...	2	Merchant,.......	1	Average,........	151	Average,..........	39
		Holland, ...	2	Germany, ...	1						
		Germany, ...	1								

CHENANGO COUNTY.

BIRTH PLACE.		Paternal.		Maternal.		Occupation.		Weight.		Age.	
New-York,...........	14	England,........	15	England,........	13	Farmers,........	8	Heaviest,........	200	Oldest,............	56
Massachusetts,........	1	Ireland,.........	1	Scotland,........	2	Lawyers,........	2	Lightest,........	125	Youngest,.........	26
Rhode Island,........	1	Scotland,........	1	Wales,..........	1	Merchants,......	3	Average,........	162	Average,..........	41
Vermont, ...	2	Wales,..........	1	France, ...	1	Physicians,......	2				
				Unknown,.......	1	Mechanics, ...	3				

CLINTON COUNTY.

New-York,	6	England,	6	England,	5	Farmers,	2	Heaviest,	190	Oldest,	48
Maine,	2	Wales,	1	Scotland,	2	Lawyers,	1	Lightest,	137	Youngest,	33
		Ireland,	1	Holland,	1	Merchants,	3	Average,	161	Average,	39¼
						Manufacturers,	2				

COLUMBIA COUNTY.

New-York,	14	England,	9	England,	6	Farmers,	13	Heaviest,	200	Oldest,	59
Massachusetts,	1	Holland,	3	Ireland,	2	Lawyers,	3	Lightest,	136	Youngest,	28
Connecticut,	1	Germany,	6	Holland,	3	Mechanics,	2	Average,	165	Average,	42¼
Rhode Island,	1			Germany,	7						
New Jersey	1										

CORTLAND COUNTY.

New-York,	7	England,	9	England,	8	Farmers,	6	Heaviest,	180	Oldest,	65
Massachusetts,	1	Ireland,	1	Ireland,	1	Merchants,	2	Lightest,	116	Youngest,	26
Vermont,	1			Germany,	1	Lawyer,	1	Average,	152	Average,	49
Connecticut,	1					Physician,	1				

DELAWARE COUNTY.

New-York,	13	England,	9	England,	10	Farmers,	10	Heaviest,	227	Oldest,	65
Scotland,	2	Scotland,	4	Scotland,	3	Lawyer,	1	Lightest,	127	Youngest,	31
Connecticut,	1	Wales,	1	Holland,	1	Merchants,	2	Average,	159	Average,	43
		Germany,	1	Ireland,	2	Physicians,	2				
		France,	1			Mechanic,	1				

DUTCHESS COUNTY.

New-York,	20	England,	20	England,	19	Farmers,	13	Heaviest,	210	Oldest,	55
Connecticut,	3	Holland,	2	Ireland,	4	Merchants,	5	Lightest,	132	Youngest,	24
Maryland,	1	Germany,	2	Germany,	1	Lawyer,	1	Average,	169¼	Average,	39¼
				France,	1	Manufacturer,	1				
						Gentleman,	1				
						Drovers,	2				
						Contractor,	1				

II. TABLE—(CONTINUED.)

BIRTH PLACE.		ANCESTORS.				Occupation.		Weight.		Age.	
		Paternal.		Maternal.							
ERIE COUNTY.											
New-York,	15	England,	23	England,	21	Farmers,	14	Heaviest,	202	Oldest,	59
Massachusetts,	3	Scotland,	1	Ireland,	4	Lawyers,	11	Lightest,	110	Youngest,	27
Rhode Island,	1	Ireland,	1	Scotland,	3	Merchants,	1	Average,	154½	Average,	44
Vermont,	6	Wales,	1	Holland,	1	Physicians,	2				
New-Hampshire,	1	Holland,	2	Germany,	1	Mechanics,	2				
Connecticut,	4	France,	2								
ESSEX COUNTY.											
New-York,	5	England,	3	England,	8	Farmers,	2	Heaviest,	194	Oldest,	53
Massachusetts,	2	Wales,	3			Merchants,	6	Lightest,	145	Youngest,	33
Vermont,	1	Ireland,	2					Average,	165	Average,	42
FRANKLIN COUNTY.											
New-York,	3	England,	7	England,	4	Farmers,	2	Heaviest,	175	Oldest,	66
Vermont,	4	Belgium,	1	Scotland,	2	Lawyers,	4	Lightest,	128	Youngest,	29
New Hampshire,	1			Ireland,	2	Merchant,	1	Average,	147½	Average,	39½
						Miller,	1				
FULTON AND HAMILTON COUNTIES.											
New-York,	7	England,	3	England,	1	Farmers,	4	Heaviest,	160	Oldest,	53
Vermont,	1	Scotland,	3	Scotland,	2	Lawyers,	2	Lightest,	110	Youngest,	30
		Holland,	1	Ireland,	2	Merchant,	1	Average,	144½	Average,	39½
		Germany,	1	Wales,	1	Manufacturer,	1				
				Holland,	1						
				Germany,	1						

GENESEE COUNTY.

New-York,	5	England,	7	England,	11	Farmers,	8	Heaviest,	195	Oldest,	61
Massachusetts,	5	Scotland,	3	Scotland,	4	Merchants,	2	Lightest,	145	Youngest,	33
Vermont,	2	Ireland,	2	Wales,	1	Mechanics,	4	Average,	165	Average,	45
Connecticut,	2	Wales,	2			Physicians,	2				
New Hampshire,	2	France,	2								

GREENE COUNTY.

New-York,	12	England,	12	England,	10	Farmers,	9	Heaviest,	189	Oldest,	56
Connecticut,	2	Scotland,	1	Scotland,	1	Lawyers,	3	Lightest,	130	Youngest,	30
Massachusetts,	1	Holland,	2	Ireland,	1	Merchants,	3	Average,	161	Average,	44
Vermont,	1	Switzerland,	1	Holland,	3	Mechanic,	1				
				Germany,	1						

HERKIMER COUNTY.

New-York,	16	England,	8	England,	8	Farmers,	10	Heaviest,	219	Oldest,	62
		Wales,	1	Wales,	2	Lawyer,	1	Lightest,	120	Youngest,	34
		Ireland,	1	Ireland,	1	Merchants,	4	Average,	172	Average,	47
		Germany,	5	Germany,	5	Mechanic,	1				
		France,	1								

JEFFERSON COUNTY.

New-York,	9	England,	16	England,	18	Farmers,	16	Heaviest,	176	Oldest,	63
Vermont,	4	Wales,	2	Wales,	2	Lawyers,	2	Lightest,	135	Youngest,	34
Massachusetts,	3	Scotland,	4	Ireland,	1	Mechanic,	1	Average,	160	Average,	47½
Rhode Island,	1	Germany,	2	Holland,	1	Merchants,	3				
New Hampshire,	2			France,	1	Accountant,	1				
Connecticut,	4			Germany,	1	Physician,	1				
Pennsylvania,	1										

KINGS COUNTY.

New-York,	14	England,	17	England,	12	Farmers,	4	Heaviest,	240	Oldest,	51
Massachusetts,	4	Scotland,	1	Wales,	1	Lawyers,	6	Lightest,	137	Youngest,	28
Rhode Island,	2	Holland,	3	Holland,	5	Merchants,	6	Average,	161	Average,	39
Connecticut,	1	France,	1	France,	3	Mechanics,	2				
New Jersey,	1			Germany,	1	Manufacturers,	2				
						Architect,	1				
						Clerk,	1				

II. TABLE—(Continued.)

LEWIS COUNTY.

BIRTH PLACE.		ANCESTORS. Paternal.		ANCESTORS. Maternal.		Occupation.		Weight.		Age.	
New-York,	5	England,	5	England,	3	Farmers,	4	Heaviest,	190	Oldest,	56
New Hampshire,	1	Scotland,	1	Ireland,	1	Merchant,	1	Lightest,	138	Youngest,	28
Connecticut,	1	Holland,	1	Wales,	2	Mechanic,	1	Average,	166¼	Average,	42
New Jersey,	1	Germany,	1	France,	2	Manufacturer,	1				
						Drover,	1				

LIVINGSTON COUNTY.

BIRTH PLACE.		ANCESTORS. Paternal.		ANCESTORS. Maternal.		Occupation.		Weight.		Age.	
New-York,	11	England,	7	England,	10	Farmers,	12	Heaviest,	192	Oldest,	59
Massachusetts,	1	Wales,	2	Scotland,	4	Lawyers,	2	Lightest,	140	Youngest,	27
Vermont,	2	Scotland,	2	Ireland,	2	Physicians,	2	Average,	160	Average,	42
New Jersey,	1	Ireland,	3								
Connecticut,	1	Holland,	2								

MADISON COUNTY.

BIRTH PLACE.		ANCESTORS. Paternal.		ANCESTORS. Maternal.		Occupation.		Weight.		Age.	
New-York,	10	England,	11	England,	11	Farmers,	13	Heaviest,	240	Oldest,	62
Massachusetts,	4	Wales,	1	Wales,	1	Lawyer,	1	Lightest,	140	Youngest,	32
Connecticut,	3	Scotland,	2	Scotland,	1	Physician,	1	Average,	168	Average,	46
Rhode Island,	1	Holland,	3	Ireland,	1	Mechanic,	1				
		Germany,	2	Germany,	1	Merchants,	2				
				Holland,	2						
				France,	1						

MONROE COUNTY.

BIRTH PLACE.		ANCESTORS. Paternal.		ANCESTORS. Maternal.		Occupation.		Weight.		Age.	
New-York,	15	England,	14	England,	13	Farmers,	15	Heaviest,	223	Oldest,	59
Massachusetts,	4	Scotland,	3	Scotland,	4	Gentlemen,	4	Lightest,	130	Youngest,	29
Vermont,	1	Ireland,	3	Holland,	3	Lawyers,	2	Average,	158	Average,	45
New Hampshire,	2	France,	2	Germany,	1	Physicians,	2				
Pennsylvania,	1	Holland,	2	Wales,	3	Mechanic,	1				
Scotland,	1										

MONTGOMERY COUNTY

New-York,	18	England,	6	England,	6	Farmers,	10	Heaviest,	272	Oldest,	62
Rhode Island,	1	Wales,	3	Scotland,	1	Lawyers,	2	Lightest,	130	Youngest,	28
New Jersey,	2	Scotland,	2	Ireland,	1	Tanner,	1	Average,	172	Average,	44
		Ireland,	1	Holland,	3	Mechanic,	1				
		Holland,	2	Germany,	4	Merchant,	1				
		Germany,	1			Boatman,	1				
		Unknown,	1								

NEW-YORK CITY AND COUNTY.

New-York,	78	England,	52	England,	57	Farmers,	8	Heaviest,	227	Oldest,	70
Massachusetts,	4	Wales,	8	Wales,	3	Lawyers,	37	Lightest,	115	Youngest,	21
Connecticut,	13	Scotland,	11	Scotland,	7	Merchants,	19	Average,	157	Average,	88
Vermont,	2	Ireland,	26	Ireland,	17	Mechanics,	30				
Maine,	1	France,	4	France,	4	Physician,	1				
New Hampshire,	1	Holland,	8	Holland,	18	Druggist,	1				
New Jersey,	5	Germany,	4	Germany,	7	Clerks,	2				
Virginia,	2	Unknown,	9	Unknown,	9	Teacher,	1				
District of Columbia,	3					Cartman,	1				
Ireland,	7					Editors,	4				
Scotland,	3					Gentlemen,	10				
Unknown,	3					Steamboat Capt'n	2				
						Engineers,	4				
						Hotel keepers,	2				
						Mariners,	3				
						Unknown,	2				

NIAGA[illegible] COUNTY.

New-York,	10	England,	9	England,	[illegible]	Farmers,	7	Heaviest,	225	Oldest,	58
Vermont,	1	Scotland,	2	Germany,	[illegible]	Lawyers,	5	Lightest,	120	Youngest,	86
Massachusetts,	2	Ireland,	1			Mechanic,	1	Average,	171	Average,	45
Canada,	3	Germany,	8			Hotel keeper,	1				
		Holland,	1			Banker,	1				
						Miller,	1				

II. TABLE—(CONTINUED.)

ONEIDA COUNTY.

BIRTH PLACE.		ANCESTORS. Paternal.		ANCESTORS. Maternal.		Occupation.		Weight.		Age.	
New-York,	25	England,	23	England,	[illegible]	Farmers,	16	Heaviest,	206	Oldest,	67
Connecticut,	2	Ireland,	5	Ireland,	[illegible]	Lawyers,	11	Lightest,	123	Youngest,	26
Massachusetts,	3	Wales,	2	Wales,	3	Merchants,	2	Average,	164⅓	Average,	41⅓
New Hampshire,	1	Scotland,	1	Scotland,	4	Mechanics,	2				
Vermont,	1	Germany,	1	France,	2	Physician,	1				
				Holland,	1						
				Germany,	1						

ONONDAGA COUNTY.

BIRTH PLACE.		ANCESTORS. Paternal.		ANCESTORS. Maternal.		Occupation.		Weight.		Age.	
New-York,	22	England,	21	England,	24	Farmers,	10	Heaviest,	190	Oldest,	63
Vermont,	1	Scotland,	4	Ireland,	3	Lawyers,	3	Lightest,	134	Youngest,	31
Massachusetts,	2	Ireland,	3	Germany,	3	Physicians,	3	Average,	160	Average,	45¼
Connecticut,	3	Germany,	3	France,	2	Merchants,	6				
Rhode Island,	1	France,	1			Mechanics,	5				
New Jersey,	2					Gentleman,	1				
England,	1					Teacher,	1				
						Salt manufactur's	2				
						Miller,	1				

ONTARIO COUNTY.

BIRTH PLACE.		ANCESTORS. Paternal.		ANCESTORS. Maternal.		Occupation.		Weight.		Age.	
New-York,	11	England,	11	England,	11	Farmers,	10	Heaviest,	190	Oldest,	67
Connecticut,	5	Wales,	1	Ireland,	2	Lawyers,	4	Lightest,	135	Youngest,	32
Vermont,	1	France,	2	Germany,	2	Merchants,	2	Average,	155	Average,	48
Maryland,	1	Ireland,	1	France,	1	Physician,	1				
		Germany,	2	Holland,	1	Mechanic,	1				
		Unknown,	1	Unknown,	1						

ORANGE COUNTY.

New-York,	22	England,	10	England,	6	Farmers,	16	Heaviest,	206	Oldest,	60
Connecticut,	1	Scotland,	2	Scotland,	2	Lawyers,	3	Lightest,	138	Youngest,	31
New-Jersey,	1	Ireland,	7	Ireland,	6	Mechanics,	2	Average,	166	Average	44
		France,	3	Wales,	1	Merchants,	2				
		Germany,	1	Holland	4	Manufacturer,	1				
		Holland,	1	Germany,	4						
				France,	1						

ORLEANS COUNTY.

New-York,	8	England,	6	England,	5	Farmers,	6	Heaviest,	165	Oldest,	55
Connecticut,	2	Wales,	1	Ireland,	2	Lawyer,	1	Lightest,	130	Youngest,	36
Vermont,	2	France,	1	France,	1	Merchant,	1	Average,	151	Average,	42
Massachusetts,	1										

OSWEGO COUNYT.

New-York,	11	England,	12	England,	7	Farmers,	4	Heaviest,	210	Oldest,	54
Massachusetts,	1	Scotland,	1	Wales,	2	Lawyers,	2	Lightest,	125	Youngest,	31
New Jersey,	2	Ireland,	3	Ireland,	3	Mechanics,	2	Average,	160½	Average,	41½
Maryland,	1			Germany,	2	Physicians,	2				
England,	1			France,	2	Merchants,	4				
						Manufacturer,	1				
						Miller,	1				

OTSEGO COUNTY.

New-York,	16	England,	20	England,	18	Farmers,	8	Heaviest,	244	Oldest,	60
Massachusetts,	1	Scotland,	2	Scotland,	1	Lawyers,	4	Lightest,	124	Youngest,	25
Connecticut,	5	Ireland,	1	Ireland,	2	Merchants,	6	Average,	162	Average,	42
New Hampshire,	1	Holland,	1	Holland,	2	Mechanics,	3				
New Jersey,	1			France,	1	Physicians,	3				

II. TABLE—(Continued.)

PUTNAM COUNTY.

BIRTH PLACE.		ANCESTORS. Paternal.		ANCESTORS. Maternal.		Occupation.		Weight.		Age.	
New-York,..........	8	England,........	7	England,........	4	Farmers,........	4	Heaviest, ...	180	Oldest,............	55
		Ireland,........	1	France,.........	2	Lawyers,........	2	Lightest,........	145	Youngest,.........	30
				Holland,........	2	Merchant,.......	1	Average,........	159	Average,..........	42
						Mechanic,.......	1				

QUEENS COUNTY.

BIRTH PLACE.		ANCESTORS. Paternal.		ANCESTORS. Maternal.		Occupation.		Weight.		Age.	
New-York,..........	8	England,........	7	England,........	1	Farmers,........	3	Heaviest, ...	207	Oldest,............	44
		Holland,........	1	Ireland,.........	2	Lawyers,........	4	Lightest,........	130	Youngest,.........	27
				Scotland,........	1	Clerk, ...	1	Average, ...	158	Average,..........	36
				Holland,........	4						

RENSSELAER COUNTY.

BIRTH PLACE.		ANCESTORS. Paternal.		ANCESTORS. Maternal.		Occupation.		Weight.		Age.	
New-York,..........	15	England,........	16	England,........	15	Farmers,........	9	Heaviest, ...	251	Oldest,............	68
Massachusetts,........	4	Scotland,.... ...	4	Scotland,........	3	Lawyers, ...	6	Lightest,........	124	Youngest,.........	31
Vermont, ...	4	Ireland,........	1	Holland,........	3	Merchants,......	5	Average,........	167	Average,..........	43
Rhode Island,........	1	Holland,........	2	Germany,.......	2	Physician,......	1				
		Germany,.......	1	France,.........	1	Mechanic,.......	1				
						Stage coach prop'r	1				
						Distiller,........	1				

RICHMOND COUNTY.

BIRTH PLACE.		ANCESTORS. Paternal.		ANCESTORS. Maternal.		Occupation.		Weight.		Age.	
New-York,..........	8	England,........	3	England,........	5	Farmers,........	4	Heaviest, ...	184	Oldest,............	56
		Holland,........	2	Wales,..........	1	Merchants,......	3	Lightest,........	150	Youngest,.........	23
		France,.........	2	Holland,........	2	Lawyer, ...	1	Average,........	167	Average,..........	41
		Germany,.......	1								

ROCKLAND COUNTY.

New-York,...........	7	England,........	2	England,........	4	Farmers,........	5	Heaviest,........	200	Oldest..............	54
New Jersey...........	1	Holland,........	4	Holland,........	3	Physician,.......	1	Lightest,.........	135	Youngest............	28
		France,.........	2	France,.........	1	Surveyor,.......	1	Average,.........	165	Average,...........	43½
						Sailor,..........	1				

ST. LAWRENCE COUNTY.

New-York,...........	11	England,........	17	England,........	11	Farmers,........	13	Heaviest,.......	215	Oldest,............	67
Massachusetts,.........	3	Wales,..........	1	Scotland,........	5	Lawyers,........	4	Lightest,.........	134	Youngest,..........	37
Vermont,.....	7	Scotland,........	2	Ireland,.........	2	Merchant,.......	1	Average,.........	189¼	Average,..........	47½
Connecticut,..........	1	Germany,.......	1	Holland,........	2	Manufacturers, ..	3				
		Unknown,.......	1	Unknown,.......	2	Surveyor,.......	1				

SARATOGA COUNTY.

New-York, ...	13	England,........	10	England,........	12	Farmers,........	9	Heaviest,.......	200	Oldest,............	61
Massachusetts,.........	1	Wales,..........	3	Scotland,........	1	Physician,.......	1	Lightest,........	120	Youngest,..........	24
Connecticut,..........	1	Ireland,.........	2	Ireland,.........	1	Mechanics,......	2	Average,.........	159¼	Average,..........	41½
New Hampshire,......	1	Germany,.......	1	Holland,........	1	Merchants,......	3				
				Germany,.......	1	Hotel keeper,....	1				

SCHENECTADY COUNTY.

New-York,...........	6	England,........	3	England,........	2	Farmers,........	6	Heaviest,.......	220	Oldest,............	54
Vermont,............	1	Scotland,........	4	Wales,..........	1	Merchant,.......	1	Lightest,........	135	Youngest,..........	20
Scotland,...........	1	Holland,........	1	Scotland,........	3	Manufacturer,...	1	Average,.........	174	Average,..........	43
				Holland,........	1						
				Germany,.......	1						

SCHOHARIE COUNTY.

New-York,...........	15	England,........	11	England,........	7	Farmers,........	11	Heaviest,........	218	Oldest,............	60
Connecticut,..........	1	Germany,.......	4	Scotland,........	1	Lawyers,........	3	Lightest,.........	130	Youngest,..........	34
		Holland,........	1	Germany,.......	3	Merchant,.......	1	Average,.........	165	Average,..........	45½
				Holland,........	4	Mechanic,.......	1				
				France,.........	1						

II. TABLE—(CONTINUED.)

SENECA COUNTY.

BIRTH PLACE.		ANCESTORS.				Occupation.		Weight.		Age.	
		Paternal.		Maternal.							
New-York,	6	England,	4	England,	5	Farmers,	4	Heaviest,	160	Oldest,	45
Massachusetts,	1	Scotland,	1	Scotland,	1	Lawyer,	1	Lightest,	145	Youngest,	38
New Jersey,	1	Ireland,	2	Ireland,	1	Physician,	1	Average,	152	Average,	41
		Germany,	1	Germany,	1	Merchant,	1				
						Miller,	1				

STEUBEN COUNTY

BIRTH PLACE.		Paternal.		Maternal.		Occupation.		Weight.		Age.	
New-York,	16	England,	11	England,	12	Farmers,	11	Heaviest,	225	Oldest,	60
Connecticut,	2	Wales,	1	Wales,	2	Lawyers,	4	Lightest,	130	Youngest,	25
Rhode Island,	2	Ireland,	4	Scotland,	1	Merchants,	6	Average,	167	Average,	46
Massachusetts,	1	Holland,	4	Ireland,	3	Physicians,	2				
Maine,	1	France,	3	Holland,	4	Manufacturer,	1				
Pennsylvania,	1	Prussia,	1	Germany,	1						
Prussia,	1			Prussia,	1						

SUFFOLK COUNTY.

BIRTH PLACE.		Paternal.		Maternal.		Occupation.		Weight.		Age.	
New-York,	16	England,	12	England,	12	Farmers,	10	Heaviest,	220	Oldest,	64
		Wales,	2	Wales,	1	Physicians,	4	Lightest,	120	Youngest,	28
		Scotland,	2	Scotland,	1	Lawyer,	1	Average,	157	Average,	41
				Germany,	1	Gentleman,	1				
				Unknown,	1						

SULLIVAN COUNTY.

New-York,	4	England,	4	England,	3	Farmer,	1	Heaviest,	185	Oldest,	57
Connecticut,	4	Scotland,	1	Wales,	1	Lawyer,	1	Lightest,	150	Youngest,	31
		Ireland,	2	Scotland,	1	Merchants,	3	Average,	158	Average,	38
		Holland,	1	Ireland,	1	Manufacturer,	1				
				Holland,	1	Mechanic,	1				
				France,	1	Tanner,	1				

TIOGA COUNTY

New-York,	5	England,	6	England,	5	Farmers,	3	Heaviest,	200	Oldest,	59
Massachusetts,	2	Wales,	1	Ireland,	2	Lawyer,	1	Lightest,	132	Youngest,	32
Connecticut,	1	Germany,	1	France,	1	Merchants,	2	Average,	161	Average,	46
						Mechanics,	2				

TOMPKINS COUNTY.

New-York,	10	England,	10	England,	10	Farmers,	7	Heaviest,	195	Oldest,	58
Connecticut,	4	Wales,	1	Ireland,	2	Lawyers,	3	Lightest,	117	Youngest,	33
Massachusetts,	1	Scotland,	1	Germany,	2	Physicians,	1	Average,	161	Average,	44½
New-Hampshire,	1	Ireland,	2	France,	2	Merchants,	1				
		Germany,	1			Mechanics,	3				
		France,	1			Gentleman,	1				

ULSTER COUNTY.

New-York,	13	England,	5	England,	7	Farmers,	3	Heaviest,	272	Oldest,	62
Connecticut,	3	Scotland,	1	Scotland,	1	Mechanics,	2	Lightest,	130	Youngest,	27
		Holland,	3	Ireland,	1	Merchants,	6	Average,	170	Average,	45
		Germany,	1	Germany,	3	Physicians,	2				
		France,	5	Holland,	1	Lawyers,	2				
		Unknown,	1	France,	3	Gentleman,	1				

WARREN COUNTY.

New-York,	7	England,	3	England,	4	Farmers,	1	Heaviest,	179	Oldest,	51
Vermont,	1	Wales,	2	Wales,	1	Lawyers,	2	Lightest,	148	Youngest,	28
		Scotland,	1	Ireland,	3	Mechanic,	1	Average,	166	Average	38½
		Ireland,	1			Merchants,	3				
		Denmark,	1			Lumberman,	1				

II. TABLE—(Continued.)

BIRTH PLACE.		ANCESTORS.				Occupation.		Weight.		Age.	
		Paternal.		Maternal.							
WASHINGTON COUNTY.											
New-York,	13	England,	8	England,	8	Farmers,	10	Heaviest,	190	Oldest,	62
Massachusetts,	1	Scotland,	4	Wales,	1	Merchants,	2	Lightest,	135	Youngest,	30
Connecticut,	1	Ireland,	3	Scotland,	4	Physician,	1	Average,	164	Average,	48
Vermont,	1	Holland,	1	Ireland,	2	Manufacturer,	1				
				Germany,	1	Gentleman,	1				
						Lawyer,	1				
WAYNE COUNTY.											
New-York,	10	England,	7	England,	9	Farmers,	10	Heaviest,	190	Oldest,	68
Massachusetts,	1	Scotland,	3	Scotland,	4	Physicians,	4	Lightest,	144	Youngest,	28
Connecticut,	2	Ireland,	2	Germany,	1	Manufacturer,	1	Average,	160½	Average,	44
New Hampshire,	1	France,	1	Holland,	1	Mariner,	1				
New Jersey,	2	Germany,	1	Unknown,	1						
		Holland,	1								
		Unknown,	1								
WESTCHESTER COUNTY.											
New-York,	16	England,	12	England,	9	Farmers,	7	Heaviest,	270	Oldest,	54
		Wales,	1	Wales,	2	Lawyers,	5	Lightest,	129	Youngest,	22
		Scotland,	2	Germany,	1	Mechanics,	2	Average,	168	Average,	36½
		France,	1	Holland,	3	Merchant,	1				
				France,	1	Engineer,	1				
WYOMING COUNTY.											
New-York,	2	England,	6	England,	8	Farmers,	5	Heaviest,	190	Oldest,	59
Connecticut,	5	Germany,	2	Ireland,	2	Merchants,	2	Lightest,	142	Youngest,	33
Vermont,	3	France,	2			Miller,	1	Average,	170	Average,	46½
						Authors,	2				

YATES COUNTY.

New-York,	4	England,	6	England,	6	Farmers,	5	Heaviest,	180	Oldest,	47
Vermont,	1	Wales,	1	Holland	2	Miller,	1	Lightest,	140	Youngest,	29
Connecticut,	1	France,	1			Merchant,	1	Average,	157¼	Average,	39
New Jersey,	1					Physician,	1				
Pennsylvania,	1										

III. TABLE.

Showing the birth place of the members of Assembly representing each county for the eight years ending with 1852.

COUNTIES.	New-York.	NEW ENGLAND STATES.						OTHER STATES.					BRITISH DOMINIONS.				Prussia.	Unknown.
		Massachusetts.	Maine.	Connecticut.	N. Hampshire.	Rhode Island.	Vermont.	Pennsylvania.	New Jersey.	Maryland.	Virginia.	Dist. Columbia.	Canada.	England.	Scotland.	Ireland.		
Albany,	26	2														2		
Allegany,	6			1			6	1	2									
Broome,	4	1		2			1											
Cattaraugus,	9	1		1			4								1			
Cayuga,	20	1					1									2		
Chautauque,	13			2			3											
Chemung,	6			1				1										
Chenango,	14	1				1	2											
Clinton,	6		2															
Columbia,	14	1		1		1			1									
Cortland,	7	1		1			1											
Delaware,	13			1											2			
Dutchess,	20			3						1								
Erie,	15	3		4	1	1	6											
Essex,	5	2					1											
Franklin,	8				1		4											
Fulton and Hamilton,	7						1											
Genesee,	5	5		2	2		2											
Greene,	12	1		2			1											
Herkimer,	16																	
Jefferson,	9	3		4	2	1	4	1										
Kings,	14	4		1		2			1									
Lewis,	5			1	1				1									
Livingston,	11	1		1			2		1									
Madison,	10	4		8		1												
Monroe,	15	4			2		1	1							1			

Montgomery,	18					1			2									
New-York,	78	4	1	13	1		2		5		2	3		1	3	7		2
Niagara,	10	2					1						3					
Oneida,	25	3		2	1		1											
Onondaga,	22	2		3		1	1		2					1				
Ontario,	11			5			1			1								
Orange,	22			1					1									
Orleans,	3	1		2			2											
Oswego,	11	1							2	1				1				
Otsego,	16	1		5	1				1									
Putnam,	8																	
Queens,	8																	
Rensselaer,	15	4				1	4											
Richmond,	8																	
Rockland,	7								1									
St. Lawrence,	11	3		1			7											
Saratoga,	13	1		1	1													
Schenectady,	6						1								1			
Schoharie,	15			1														
Seneca,	6	1							1									
Steuben,	16	1	1	2		2		1									1	
Suffolk,	16																	
Sullivan,	4			4														
Tioga,	5	2		1														
Tompkins,	10	1		4	1													
Ulster,	13			3														
Warren,	7						1											
Washington,	13	1		1			1											
Wayne,	10	1		2	1				2									
Westchester,	16																	
Wyoming,	2			5			3											
Yates,	4			1			1	1	1									
	709	64	4	88	15	12	66	6	24	3	2	3	3	3	8	11	1	2

IV. TABLE

Showing the foreign country from which came the paternal and maternal ancestors of each representative in the Assembly for the past eight years.

COUNTIES.	PATERNAL ANCESTORS.												MATERNAL ANCESTORS.									
	BRITISH DOMINIONS.					EUROPEAN CONTINENT.							BRITISH DOMINIONS.					EUROPEAN CONTINENT.				
	England.	Wales.	Scotland.	Ireland.	Unknown.	Holland.	Germany.	France.	Belgium.	Switzerland.	Prussia.	Denmark.	England.	Wales.	Scotland.	Ireland.	Unknown.	Holland.	Germany.	France.	Prussia.	Switzerland.
Albany,	17	1	....	2	....	7	3	....	....	....	....	....	15	....	4	3	....	5	3	....	....	....
Allegany,	15	....	1	....	....	....	....	....	....	....	....	....	15	....	1	....	....	....	....	....	....	....
Broome,	7	....	....	1	....	....	....	....	....	....	....	....	5	....	....	1	....	....	2	....	....	....
Cattaraugus,	13	....	1	2	....	....	....	....	....	....	....	....	9	2	4	1	....	....	....	....	....	....
Cayuga,	12	1	4	4	....	3	....	....	....	....	....	....	17	....	....	3	....	2	....	2	....	....
Chautauque,	14	2	1	....	....	1	....	....	....	....	....	....	17	....	1	....	....	....	....	....	....	....
Chemung,	2	1	2	....	....	2	1	....	....	....	....	....	4	....	....	....	....	2	1	1	....	....
Chenango,	15	1	1	1	....	....	....	....	....	....	....	....	13	1	2	....	1	....	....	1	....	....
Clinton,	6	1	....	1	....	....	....	....	....	....	....	....	5	....	2	....	....	1	....	....	....	....
Columbia,	9	....	....	....	....	3	6	....	....	....	....	....	6	....	....	2	....	3	7	....	....	....
Cortland,	9	....	....	1	....	....	....	....	....	....	....	....	8	....	....	1	....	....	1	....	....	....
Delaware,	9	1	4	....	....	....	1	1	....	....	....	....	10	....	3	2	....	1	....	....	....	....
Dutchess,	20	....	....	....	....	2	2	....	....	....	....	....	18	....	....	4	....	....	1	1	....	....
Erie,	23	1	1	1	....	2	....	2	....	....	....	....	21	....	3	4	....	1	1	....	....	....
Essex,	3	3	....	2	....	....	....	....	....	....	....	....	8	....	....	....	....	....	....	....	....	....
Franklin,	7	....	....	....	....	....	....	....	1	....	....	....	4	....	2	2	....	....	....	....	....	....
Fulton and Hamilton,	3	....	3	....	....	1	1	....	....	....	....	....	1	1	2	2	....	1	1	....	....	....
Genesee,	7	2	3	2	....	....	....	2	....	....	....	....	11	1	4	....	....	....	....	....	....	....
Greene,	12	....	1	....	....	2	....	....	....	1	....	....	10	....	1	1	....	3	1	....	....	....
Herkimer,	8	1	....	1	....	....	5	1	....	....	....	....	8	2	....	1	....	....	5	....	....	....
Jefferson,	16	2	4	....	....	....	2	....	....	....	....	....	18	2	....	1	....	1	1	1	....	....
Kings,	17	....	1	....	....	3	....	1	....	....	....	....	12	1	....	....	....	5	1	3	....	....
Lewis,	5	....	1	....	....	1	1	....	....	....	....	....	3	2	....	1	....	....	....	2	....	....
Livingston,	7	2	2	3	....	2	....	....	....	....	....	....	10	....	4	2	....	....	....	....	....	....

Madison,	11	1	2	....	....	2	2	....	....	....	....	....	11	1	1	1	....	2	1	1	....	....
Monroe,	14	....	3	3	....	2	....	2	....	....	....	....	13	3	4	....	....	3	1	....	....	....
Montgomery,	6	3	2	1	1	2	1	....	....	....	....	....	6	....	1	1	....	3	4	....	....	....
New-York,	52	8	11	26	9	8	4	4	....	....	....	....	57	3	7	17	9	18	7	4	....	....
Niagara,	9	....	2	1	....	1	3	....	....	....	....	....	14	....	....	....	....	....	2	....	....	....
Oneida,	23	2	1	5	....	....	1	....	....	....	....	....	18	3	4	3	....	1	1	2	....	....
Onondaga,	21	....	4	3	....	....	3	1	....	....	....	....	24	....	....	3	....	....	3	2	....	....
Ontario,	11	1	....	1	1	....	2	2	....	....	....	....	11	....	....	2	1	1	2	1	....	....
Orange,	10	....	2	7	....	1	1	3	....	....	....	....	6	1	2	6	....	4	4	1	....	....
Orleans,	6	1	....	....	....	....	....	1	....	....	....	....	5	....	....	2	....	....	....	1	....	....
Oswego,	12	....	1	3	....	....	....	....	....	....	....	....	7	2	....	3	....	....	2	2	....	....
Otsego,	20	....	2	1	....	1	....	....	....	....	....	....	18	....	1	2	....	2	....	1	....	....
Putnam,	7	....	....	1	....	....	....	....	....	....	....	....	4	....	....	....	....	2	....	2	....	....
Queens,	7	....	....	....	....	1	....	....	....	....	....	....	1	....	1	2	....	4	....	....	....	....
Rensselaer,	16	....	4	1	....	2	1	....	....	....	....	....	15	....	3	....	....	3	2	1	....	....
Richmond,	3	....	....	....	....	2	1	2	....	....	....	....	5	1	....	....	....	2	....	....	....	....
Rockland,	2	....	....	....	....	4	....	2	....	....	....	....	4	....	....	....	....	3	....	1	....	....
St. Lawrence,	17	1	2	....	1	....	1	....	....	....	....	....	11	....	5	2	2	2	....	....	....	....
Saratoga,	10	3	....	2	....	....	1	....	....	....	....	....	12	....	1	1	....	1	1	....	....	....
Schenectady,	3	....	4	....	....	1	....	....	....	....	....	....	2	1	8	....	....	1	1	....	....	....
Schoharie,	11	....	....	....	....	1	4	....	....	....	....	....	7	....	1	....	....	4	3	1	....	....
Seneca,	4	....	1	2	....	....	1	....	....	....	....	....	5	....	1	1	....	....	1	....	....	....
Steuben,	11	1	....	4	....	4	....	3	....	....	1	....	12	2	1	3	....	4	1	....	1	....
Suffolk,	12	2	2	....	....	....	....	....	....	....	....	....	12	1	1	....	1	....	1	....	....	....
Sullivan,	4	....	1	2	....	1	....	....	....	....	....	....	3	1	1	1	....	1	....	1		....
Tioga,	6	1	....	....	....	....	1	....	....	....	....	....	5	....	....	2	....	....	....	1	....	....
Tompkins,	10	1	1	2	....	....	1	1	....	....	....	....	10	....	....	2	....	....	2	2	....	....
Ulster,	5	....	1	....	1	3	1	5	....	....	....	....	7	....	1	1	....	1	3	3	....	....
Warren,	3	2	1	1	....	....	....	....	....	....	....	1	4	1	....	3	....	....	....	....	....	....
Washington,	8	....	4	3	....	1	....	....	....	....	....	....	8	1	4	2	....	....	1	....	....	....
Wayne,	7	....	3	2	1	1	1	1	....	....	....	....	9	....	4	....	1	1	1	....	....	....
Westchester,	12	1	2	....	....	....	....	1	....	....	....	....	9	2	....	....	....	3	1	1	....	....
Wyoming,	6	....	....	....	....	....	2	2	....	....	....	....	8	....	....	2	....	....	....	....	....	....
Yates,	6	1	....	....	....	....	....	1	....	....	....	....	6	....	....	....	....	2	....	....	....	....
	621	48	86	92	14	67	54	38	1	1	1	1	597	35	80	93	15	93	70	40	1	24

V. TABLE

Showing the occupations of the members of Assembly for the past 8 years.

COUNTIES.	Farmers.	Merchants.	Mechanics.	Manufacturers.	Drovers.	Contractors.	Millers.	Tanners.	Boatmen.	Cartman.	Lawyers.	Physicians.	Gentlemen.	Clerks.	Architect.	Teachers.	Authors.	Editors.	Surveyors.	Engineers.	Steamboat capt's.	Hotel keepers.	Mariners.	Druggists.	Banker.	Stage coach proprietor.	Lumberman.	Distiller.	Unknown.
Albany,	14	4	....	....	....	....	....	....	....	....	10	2	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Allegany,	8	2	....	....	....	....	....	....	....	....	4	2	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Broome,	4	2	1	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Cattaraugus,	8	4	....	....	....	....	....	....	....	....	3	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Cayuga,	16	1	1	1	....	....	....	....	....	....	4	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Chautauque,	7	2	1	....	....	....	....	....	....	....	7	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Chemung,	6	1	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Chenango,	8	2	3	....	....	....	....	....	....	....	2	2	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Clinton,	2	8	....	2	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Columbia,	13	....	2	....	....	....	....	....	....	....	3	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Cortland,	6	2	....	....	....	....	....	....	....	....	1	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Delaware,	10	2	1	....	....	....	....	....	....	....	1	2	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Dutchess,	13	5	....	1	2	1	....	....	....	....	1	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Erie,	14	1	2	....	....	....	....	....	....	....	11	2	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Essex,	2	6	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Franklin,	2	1	....	....	....	....	1	....	....	....	4	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Fulton & Hamilton,	4	1	....	1	....	....	....	....	....	....	2	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Genesee,	8	2	4	....	....	....	....	....	....	....	....	2	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Greene,	9	3	1	....	....	....	....	....	....	....	3	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Herkimer,	10	4	1	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Jefferson,	16	3	1	....	....	....	....	....	....	....	2	1	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Kings,	4	6	2	2	....	....	....	....	....	....	6	....	....	1	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Lewis,	4	1	1	1	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Livingston,	12	....	....	....	....	....	....	....	....	....	2	2	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Madison,	13	2	1	....	....	....	....	....	....	....	1	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Monroe,	15	....	1	....	....	....	....	....	....	....	2	2	4	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Montgomery,	10	1	1	....	....	....	....	1	1	....	2	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
New-York,	3	19	30	....	....	....	....	....	....	1	37	1	10	2	....	1	....	4	....	4	2	2	3	1	....	....	....	....	2

Niagara,	7		1				1				5											1			1				
Oneida,	16	2	2								11	1																	
Onondaga,	10	6	5	2			1				3	3	1			1													
Ontario,	10	2	1								4	1																	
Orange,	10	2	2	1							3																		
Orleans,	6	1									1																		
Oswego,	4	4	2	1			1				2	2																	
Otsego,	8	6	3								4	3																	
Putnam,	4	1	1								2																		
Queens,	3										4			1															
Rensselaer,	9	5	1								6	1														1		1	
Richmond,	4	8									1																		
Rockland,	5											1							1				1						
St. Lawrence,	13	1		8							4								1										
Saratoga,	9	3	2									1										1							
Schenectady,	6	1		1																									
Schoharie,	11	1	1								3																		
Seneca,	4	1					1				1	1																	
Steuben,	11	6	1								4	2																	
Suffolk,	10										1	4	1																
Sullivan,	1	3	1	1				1			1																		
Tioga,	3	2	2								1																		
Tompkins,	7	1	3								3	1	1																
Ulster,	3	6	2								2	2	1																
Warren,	1	3	1								2																1		
Washington,	10	3		1							1	1	1																
Wayne,	10			1								4											1						
Westchester,	7	1	2									5								1									
Wyoming,	5	2					1										2												
Yates,	6	1					1					1																	
	450	157	87	19	3	1	7	2	1	1	180	58	20	3	1	2	2	4	2	5	2	4	5	1	1	1	1	1	3

VI.—TABLE

Showing the extreme and average weight, and also the extreme and average age of the representatives of each county, for the past eight years.

COUNTIES.	WEIGHT.			AGE.		
	Heaviest.	Lightest.	Average.	Oldest.	Youngest.	Average.
Albany,	225	125	159	57	24	39
Allegany,	196	125	148	59	29	42
Broome,	215	120	172	57	31	41
Cattaraugus,	180	128	158	56	28	41
Cayuga,	200	115	158	54	34	43
Chautauque,	215	135	169	57	33	44½
Chemung,	175	125	151	52	34	39
Chenango,	200	125	162	56	26	41
Clinton,	190	137	161	48	33	39½
Columbia,	200	136	165	59	28	42½
Cortland,	180	116	152	65	26	49
Delaware,	227	127	159	65	31	43
Dutchess,	210	132	169½	55	24	39½
Erie,	202	110	154½	59	27	44
Essex,	194	145	165	53	33	42
Franklin,	175	128	147½	66	29	39½
Fulton and Hamilton,	160	110	144½	52	30	39½
Genesee,	195	145	165	61	33	45
Greene,	189	130	161	56	30	44
Herkimer,	219	120	172	62	34	47
Jefferson,	176	135	160	63	34	47½
Kings,	240	137	161	51	23	39
Lewis,	190	138	166½	56	28	42
Livingston,	192	140	160	59	27	42
Madison,	240	140	168	62	32	46
Monroe,	223	130	158	59	29	45
Montgomery,	272	130	172	62	28	44
New-York,	227	115	157	70	21	38
Niagara,	225	120	171	58	36	45
Oneida,	206	123	164½	67	26	41½
Onondaga,	190	134	160	63	31	45½
Ontario,	190	135	155	67	32	48
Orange,	206	138	166	60	31	44
Orleans,	165	130	151	55	36	42
Oswego,	210	125	160½	54	31	41½
Otsego,	244	124	162	60	25	42
Putnam,	180	145	159	55	30	42
Queens,	207	130	158	44	27	36
Rensselaer,	251	124	167	63	31	43
Richmond,	184	150	157	56	23	41
Rockland,	200	135	165	54	28	43½
St. Lawrence,	215	134	189½	67	37	47½
Saratoga,	200	120	159½	61	24	41½
Schenectady,	220	135	174	54	29	43
Schoharie,	218	130	165	60	34	45½

TABLE VI.—(Continued.)

COUNTIES.	Weight.			Age.		
	Heaviest.	Lightest.	Average.	Oldest.	Youngest.	Average.
Seneca,	160	145	152	45	38	41
Steuben,	225	180	167	60	25	45
Suffolk,	220	120	157	64	28	41
Sullivan,	185	150	158	57	31	38
Tioga,	200	132	161	59	32	46
Tompkins,	195	117	161	58	33	44½
Ulster,	272	130	170	62	27	45
Warren,	179	148	166	51	28	38½
Washington,	190	135	164	62	30	48
Wayne,	190	144	160⅓	68	28	44
Westchester,	270	129	168	54	22	36½
Wyoming,	190	142	170	59	33	46½
Yates,	180	140	157½	47	29	39

VII. TABLE

Showing the counties from which the officers of the Assembly have been taken for the last eight years, their native State, the country from which their ancestors came, and their various occupations.

COUNTY.

Albany,	17	Jefferson,	2	Rensselaer,	6
Allegany,	1	Kings,	3	St. Lawrence,	1
Cattaraugus,	2	Livingston,	1	Saratoga,	1
Cayuga,	2	Madison,	4	Seneca,	1
Chenango,	6	Monroe,	2	Steuben,	1
Clinton,	2	Montgomery,	5	Suffolk,	1
Columbia,	3	New-York,	4	Sullivan,	1
Cortland,	1	Oneida,	5	Tompkins,	1
Delaware,	1	Orange,	1	Ulster,	1
Dutchess,	2	Orleans,	3	Washington,	2
Erie,	3	Oswego,	1	Wayne,	3
Franklin,	2	Otsego,	3	Westchester,	3
Greene,	3	Queens,	1	Wyoming,	2
Herkimer,	1				

BIRTHPLACE.

New-York,	90	Connecticut,	3	Vermont,	2
Massachusetts,	2	Rhode Island,	1	Unknown,	3
England,	2	Ireland,	3		

PATERNAL ANCESTORS.

England,	55	Ireland,	11	France,	9
Wales,	2	Holland,	9	Hungary,	1
Scotland,	14	Germany,	4	Spain,	1

MATERNAL ANCESTORS.

England,	50	Ireland,	9	Germany,	9
Wales,	4	Holland,	19	France,	2
Scotland,	13				

TABLE VII.—(CONTINUED.)

OCCUPATION.

Lawyers,	13	Students,	3	Mariners,	3
Merchants,	8	Physicians,	2	Contractor,	1
Engineers,	3	Baker,	1	Miller,	1
Hotelkeepers,	3	Clerks,	13	Laborer,	1
Farmers,	19	Editors,	5	Boatman,	1
Mechanics,	25	Teachers,	2	Drover,	1
Printer,	1				

TRANSACTIONS

OF THE

AMERICAN INSTITUTE

OF THE

CITY OF NEW-YORK,

FOR THE YEAR

1851.

ALBANY:
CHARLES VAN BENTHUYSEN, PRINTER TO THE LEGISLATURE.
. . . .
1852.

AMERICAN INSTITUTE.

TRUSTEES AND COMMITTEES FOR 1851.

TRUSTEES.

JAMES TALLMADGE, *President.*
LIVINGSTON LIVINGSTON,
ROBERT LOVETT, *Vice Presidents.*
ROBERT L. PELL,
EDWARD T. BACKHOUSE, *Treasurer.*
HENRY MEIGS, *Recording Secretary.*
ADONIRAM CHANDLER, *Corresponding Sec'y and Ag't.*

COMMITTEE ON FINANCE.

John Campbell,
John A. Bunting,
Gordon L. Ford,
Cornelius L. Sidell,
George Bacon.

MANAGERS OF THE TWENTY-FOURTH ANNUAL FAIR.

William Hall,
Joseph Torrey,
Jas. R. Smith,
Isaac V. Brower,
Heman W. Childs,
Martin E. Thompson,
Edwin Smith,
Wm. Ebbitt,
H. P. Blackman,
Wm. C. Arthur,
Jacob C. Parsons,
Gordon L. Ford,
John A. Bunting,
Thomas W. Harvey,
Henry Spear,
John G. Bell,
Geo. C. Mann,
F. W. Geissenhainer, Jun.,
Lewis G. Morris,
John M. Reed,
Peter B. Mead,
Paul Stillman,
M. L. Ward,
Benjamin Aycrigg,
C. F. Lindsley.

COMMITTEE ON AGRICULTURE.

Lewis G. Morris,
David Banks,
Charles H. Hall,
R. S. Livingston,
James De Peyster.

COMMITTEE ON COMMERCE.

Freeman Hunt,
Joseph Torrey,
Luther B. Wyman,
Geo. F. Barnard,
George Dickey.

COMMITTEE ON MANUFACTURES, SCIENCE AND ARTS.

Jas. Renwick,
T. B. Stillman,
John D. Ward,
Henry Meigs,
H. R. Dunham.

COMMITTEE ON THE ADMISSION OF MEMBERS.

Alanson Nash,
Henry Meigs,
Henry P. Blackman,
George F. Barnard,
John Campbell.

COMMITTEE ON CORRESPONDENCE.

Geo. Bacon,
Alanson Nash,
Ralph Lockwood,
Chas. Henry Hall,
Robert L. Pell.

COMMITTEE ON THE LIBRARY.

Livingston Livingston,
Ralph Lockwood,
Jacob C. Parsons,
H. P. Blackman,
Gordon L. Ford.

State of New-York.

No. 129.

IN ASSEMBLY, MAR. 29, 1852.

ANNUAL REPORT OF THE AMERICAN INSTITUTE.

NEW-YORK, *February 3d*, 1852.

To the Hon. JONAS C. HEARTT,

Speaker of the House of Assembly:

SIR—I herewith transmit the Tenth Annual Report of the American Institute of the city of New-York.

Very respectfully,
Your obedient servant,
ADONIRAM CHANDLER,
Corresponding Secretary.

TENTH ANNUAL REPORT

OF THE TRUSTEES OF THE AMERICAN INSTITUTE.

In conformity to the law passed May 5, 1841, the Trustees of the American Institute present herewith a report of their proceedings in the department of agriculture for the year 1851, containing detailed statements of their exhibitions of pure breed and other useful farm stock, and of the agricultural productions of our country, as presented at their late 24th annual fair, held at Castle Garden, in the city of New-York.

We did not anticipate at our annual Fair for 1851, a very extensive display of the products of agriculture, owing to the occurrence of circumstances, during a large portion of the season, unfavorable to tillage; particularly in that region of country from which the materials composing our exhibitions are mainly derived. We have been, however, very agreeably disappointed. The exhibition in all the departments of agriculture, horticulture, pomology, and floriculture, was very full, presenting specimens of superior quality, in some respects, to those of former years. The cereals, and the various modes of preparing them for the purposes of food and transhipment, are marked with improvement, as the various details to be found in the following pages will more fully explain.

The display of agricultural implements was very complete; among them we would particularly notice as new and deserving attention, the flax and hemp breaking and dressing machine of S. O. Clemens, of Springfield, Mass.; the grain drill of R. J. Gatling, of Indianapolis, Ind.; the self-sharpening straw and brush cutter of Reuben Daniels, Woodstock, Vt.

David J. Millard, from the Paris Furnace Co., Clayville, Oneida county, N. Y., exhibited a large assortment of scythes, cutters, hay and manure forks of various kinds, &c., which for beauty of workmanship and finish stand unequalled. Mr. H. L. Emery, from his agricultural warehouse in Albany, exhibited the greatest variety of implements, all of excellent quality.

The exhibition of cattle and other farm stock, which took place on the 15th, 16th and 17th days of October, at Madison Cottage, was unusually full and attractive, and deemed by a large concourse of agricultural men who attended, to be the best exhibition ever held by the Institute, the details of which will be found in the report of our agricultural committee.

It is an admitted truth that at the close of our revolutionary war, the *knowledge and practice* of agriculture, the arts and manufactures in the United States, were extremely *deficient and unproductive.* The agricultural societies of Boston and Philadelphia kept alive a spirit of inquiry, but for practical purposes, their doings did not reach the doors of the working farmer. In 1791 a few patriotic men, influenced by motives of public utility, instituted in the city of New-York a society for the advancement of agriculture, the arts, and manufactures. To the efforts of Robert R. Livingston, E. L'Hommedieu, Samuel L. Mitchell, James Kent, Simeon DeWitt, J. S. Hobart, John Jay, Richard Varick, and a few associates, we are indebted for this organization, probably the first which appears on record in the State of New-York. In 1794 it was incorporated by the Legislature, to continue until 1804. The efforts of these gentlemen undoubtedly gave rise to very important investigations in regard to tillage, the rearing of stock, &c., and laid a foundation for the organizations which have succeeded it.

No effort of a public character, designed to aid agriculture, appears to have been made from 1804 until 1819, when the act of our Legislature for the advancement of agriculture, arts and manufactures, was passed. This act appropriated $10,000 per annum for two years, to be distributed to the respective counties of the State, pro rata; depending, however, on the raising and expending a like sum by the county for the same purposes. The act was extended at the session of 1820, to continue four years from the termination of the first act. The law met with very strenuous opposition when before the Legislature, and it was continued in various ways during its existence; arising as has been alleged, from want of information and ill-founded jealousies. It was permitted to expire in 1824 by its own limitation, without an effort to resuscitate it. The sincere friends of these great interests felt it to be hopeless to expect further aid from the Legislature; and nothing was done until the organization of the American Institute in 1828, which stood alone in its efforts until 1841, when the law which now exists was passed by the Legislature. This law called into existence the N. Y. State Agricultural Society, and the county societies, of which there is now one in almost every county of the State.

It is extremely gratifying to the members of the American Institute to witness the demonstrations now annually made; they feel assured that the plan originally adopted and pursued by them was better calculated to awaken latent genius and infuse a general spirit of emulation among the producing classes, than those previously pursued. And also to witness the increasing zeal manifested in the cause of agriculture, which now seems to pervade, not only our own, but many States of the Union. They believe that their efforts, thus commenced and persevered in, have exercised no small agency in producing benefits to our country which will be enduring.

New-York, Dec. 1851.

JAMES TALLMADGE,
LIV. LIVINGSTON,
ROBT. LOVETT,
ROBT. L. PELL,
E. T. BACKHOUSE,
H. MEIGS,
ADONIRAM CHANDLER,
Trustees.

FINANCES.

The following is the financial condition of the American Institute on the 1st day of February, 1852:

Balance in the treasury, February 1, 1851,......		$3,579 77
The receipts of the year have been,		
From managers of the 24th fair,.....	$6,938 16	
Treasurer State of New-York,....	950 00	
Members,......................	2,154 00	
Certificates of awards,..........	56 00	
Use of chandeliers,.............	30 00	
Duplicate Medals,..............	44 00	
Sales of Transactions,...........	6 00	
Rent of premises, No. 351 Broadway, Nov. 1850 to Nov. 1851,..	3,000 00	
Interest on bond of $5,000, Dec. 17, 1850 to Jan. 1, 1852,..........	311 67	
		13,489 83
		$17,069 60

PAYMENTS.

Real Estate.

Interest on bond and m'tgage, $25,000, Nov. 1850 to Nov. 1851,..................	$1,625 00		
Insurance on building,.....	90 00		
Taxes,....................	403 51		
Stone coping for wall,......	61 78		
Water and waste pipes,.....	41 81		
		$2,225 13	

Committee on fitting up rooms.

Carpenters' work making book cases, locks, &c.,.........	$542 39		
Carried forward,.......	$542 39	$2,225 13	$17,069 60

Brought forward,		$542 39	$2,225 13	$17,069 60
Chandeliers and gas pipes,		219 00		
Desk,		35 00		
Iron safe,		110 00		
Painting,		55 75		
Blinds,		26 00		
Other disbursements,		86 67		
			1,074 81	
On account of 22d Annual Fair.				
Shafting, pullies, &c.,			39 44	
On account of 23d Annual Fair.				
Shafting, pullies, pipes, building foundation of engine, &c.,		$574 03		
Orator's expenses,		36 10		
Printing, advertising, &c.,		207 86		
Premiums,		776 63		
			1,594 62	
Library.				
Books,		$372 26		
Subscription to Newspapers,		72 00		
Printing catalogue of library,		323 79		
Extra services in library,		42 54		
Blank books,		9 00		
			819 59	
Miscellaneous bills.				
Expenses of Farmers' Club, Sec'y reporting 21 meetings,	$210 00			
Pap'rs for distribution,	131 25			
		$341 25		
Insurance,		65 83		
Portraits for Transactions,		135 63		
Printing,		76 55		
Stationery,		12 12		
Fuel,		48 50		
Gas,		26 45		
Carried forward,		$706 33	$5,753 59	$17,069 60

Brought forward,	$706 33	$5,753 59	$17,069 60
Freight, &c.,	22 65		
Lecture on geometry,	18 50		
Duplicate medals,	43 00		
Filling up certificates,	5 00		
Ice,	15 00		
Petty cash—postag's, cleaning, subscription to small pap'rs, advertising, &c.,	264 12		
		1,074 60	
Salaries.			
Agent,	$1,050 00		
Recording Secretary,	350 00		
Clerk,	691 66		
Librarian,	430 00		
Messenger,	150 75		
		2,672 41	
			9,500 60
			$7,569 00
Loaned on bond and mortgage,			5,000 00
Balance in the treasury February 1, 1852,			$2,569 00

REPORT OF THE BOARD OF MANAGERS

OF THE

TWENTY-FOURTH ANNUAL FAIR, 1851.

The Board of Managers of the twenty-fourth Annual Fair of the American Institute, respectfully

REPORT:

The twenty-fourth Annual Fair was opened at Castle Garden on Wednesday, the 1st day of October, 1851, and closed on the 25th.

The attendance of visitors was as usual very large, and though the cash receipts does not quite equal that of last year, yet this was one of the most successful exhibitions of the Institute.

It may be safely stated, that no preceding fair ever elicited a higher degree of interest and certainly none was ever more deserving of it. Let it be borne in mind that a greater number of fairs were held during last fall than have ever been known before, and it will be clearly perceived that the subject is losing nothing in public interest, and it need create no surprise that persons living at a distance should be satisfied with having a fair at their own doors. Though we may thus have lost a few visitors we have the satisfaction of knowing that the great cause for which we labor has gained in public esteem.

The many articles of utility, taste and elegance there displayed and the competition in the various branches of manufactures are certain proofs of the benefits arising from the encouragement given them by the American Institute.

The Cattle Show was probably the most interesting that has ever been held in our city, and we are pleased to see the increased interest created in this important department of our exhibition.

The number of entries in the Manufacturing and Mechanical Department, were,	2,025
In the Horticultural Department,	256
Making,	2,281
entries at Castle Garden.	
The number of exhibitors at the Cattle Show,	110
Making a total of,	$2,391

The following is a condensed statement of the Receipts and Expenditures of the twenty-fourth Annual Fair. For details, you are referred to the Report of that Committee, which accompanies and makes a part of this Report.

RECEIPTS.

To cash received from sales of tickets at Castle Garden,

	Wednesday,	October	1,	$210 00
"	Thursday,	"	2,	458 00
"	Friday,	"	3,	345 50
"	Saturday,	"	4,	378 50
"	Monday,	"	6,	938 00
"	Tuesday,	"	7,	1,072 56
"	Wednesday,	"	8,	1,344 00
"	Thursday,	"	9,	1,282 00
"	Friday,	"	10,	1,096 00
"	Saturday,	"	11,	1,023 25
"	Monday,	"	13,	838 00
"	Tuesday,	"	14,	1,283 50
"	Wednesday,	"	15,	1,552 00
"	Thursday,	"	16,	1,436 25
"	Friday,	"	17,	1,073 25
"	Saturday,	"	18,	605 85
"	Monday,	"	20,	1,000 00
Carried forward,				$15,936 66

Brought forward, ...	$15,936 66	
To cash rec'd Tuesday, October 21,....	842 75	
" Wednesday, " 22,....	551 00	
" Thursday, " 23,....	831 00	
" Friday, " 24,....	773 50	
" Saturday, " 25,....	744 35	
		$19,679 26
To cash received at Cattle Show,		
" Wednesday, October 15,...	$140 29	
" Thursday, " 16,...	341 81	
" Friday, " 17,...	225 43	
		707 53
" Rent of stands, ...		250 00
" Sales of Catalogue at Cattle Show,...		13 50
" Premium on silver, ...		10 30
" New Jersey Exploring and Mining Co. for Premiums on zinc Painting, ..		175 00
" Broken show case, ...		2 00
" Over deposite and to balance, ...		12
		$20,837 71
Less Discount, $67.21—Bad bills, $7,.............		74 21
Total net Receipts,.........		$20,763 50

EXPENDITURES.

By Printing and Publication Committee.

Printing Circulars, Blanks, Invitation tickets, Handbills, &c., ...	$321 33	
Advertising,........	258 18	
		$579 51

By Committee on Light.

Gas,......................	$381 62		
Oil, use of lamps and candles,	240 36		
Gas pipes on bridge,........	43 75		
Lighting lamps, &c.,........	121 27		
		787 00	
Carried forward,.........		$1,366 51	$20,763 50

Brought forward,		$1,366 51	$20,763 50
By Police and Labor Committee.			
Superintendent,	$195 00		
Clerks,	186 50		
Police and night watch,	1,072 00		
Laborers,	249 00		
		1,702 50	
By Finance Committee.			
Ticket sellers and counter,		165 00	
By Ticket Committee.			
Ticket receivers and counter,		120 00	
By Agricultural Committee.			
Erecting sheds, pens, &c.,	$271 00		
Plan of do do	15 00		
Printing catalogue,	14 00		
Advertising, (extra,)	170 00		
Clerk, laborers, &c.,	56 00		
Expenses by committee,	13 00		
Rosetts for cattle, and ribbon,	12 29		
Refreshments for judges and committees,	88 37		
Tubs, pails, rope, &c.,	25 48		
		665 14	
By Horticultural Committee.			
Clerk,	$52 00		
Assistants,	307 50		
Use of crockery,	13 43		
Painting stands, boxwood and sundries,	43 23		
		416 16	
Carried forward,		$4,435 31	$20,763 50

Brought forward,		$4,435 31	$20,763 50
By Committee on Machinery and Steam Power.			
Superintendent, engineer and laborer in engine room,	$235 88		
Coal, wood, lighterage and labor,	130 19		
Croton Aqueduct Department water,	10 00		
Iron pipe, labor, &c.,	42 44		
Repairs of roof, painting, &c,	167 99		
Truck,	20 00		
		606 50	
By Music Committee.			
Bloomfield's band,	$781 00		
North Carolina band,	18 00		
		799 00	
By Committee on Fireworks.			
Fireworks,		100 00	
By Refreshment Committee.			
Dinners for Managers while detailed on duty, and guests from a distance,	$410 75		
Refreshments for Managers and committee,	124 54		
		535 29	
Miscellaneous Bills.			
Rent of Castle Garden 22 days at $100 per day,	$2,200 00		
Carpenter's work, covering bridge and fitting up interior,	761 54		
Carried forward,	$2,961 54		$20,763 50

Brought forward,		$2,961 54		$20,763 50
Glazing broken glass in show cases,		36 32		
Muslin for tables and flags,		93 11		
Flag poles and mounting,		55 46		
Broadway Tabernacle for address,		62 00		
Orator's expenses,		51 63		
Stationery, blank books, &c.,		36 13		
Bill posting,		17 00		
Sundry expenses for items, (see report,)		84 40		
			3,402 59	

By Premium Committee.

Gold and silver for medals and striking,		$1,865 84		
Engraving,		278 50		
Silver cups,		581 00		
Medal cases,		122 00		
Diplomas, printing and paper,		81 00		
Filling up diplomas,		82 00		
Silver ware,		22 43		
Books,		153 88		
Cash premiums:				
Instead of cups and medals,	$410 00			
Apprentices and minors,	105 00			
Van Schaick prem.,	20 00			
N. J. Ex. & Min. Co.,	175 00			
Fire works,	50 00			
		760 00		
			3,946 65	
Making a total expenditure of				13,825 34
Which being deducted from the receipts, leaves				$6,938 16

Brought forward,		$6,938 16
Of which amount there has been paid into the treasury of the American Institute,		4,948 50
Leaving a balance on hand this day, of		$1,989 66
By the above statement it will be seen that the surplus, after paying the bills, was		$6,938 16
There are still some unsettled claims, amounting to about		200 00
Which will leave a surplus of		$6,738 16
Last year the amount paid into the treasury, on the 1st of January, was	$7,724 63	
From which deduct bills then outstanding, and since paid,	1,594 62	
Making the surplus of the 23d fair,		6,130 01
Which exceeds the surplus of the 22d fair, by		$608 15

The Premium Committee, of which Mr. James R. Smith was chairman, reported that the awards of the late fair were as follows:

74 gold medals,
78 silver cups,
310 silver medals,
680 diplomas,
110 volumes of books,
$20 and 3 bronze medals, Van Schaick premium,
$175, the N. J. Min and Ex. Co. premium,
$50, premium on fire works,
$28, cattle premiums,
$115, minors' and apprentices' premiums.

By a rule adopted, the successful competitors in the agricultural and horticultural department had a choice of receiving their premiums in cash, in place of cups and medals. A number have embraced this method of receiving their premiums; the amount so paid has amounted to $382. The committee estimated the cost of the premiums at four thousand dollars, the amount of bills paid by the Finance Committee, is $3,946.65.

Respectfully submitted.

WILLIAM HALL, *Chairman.*

JOSEPH TORREY,
JAS. R. SMITH,
ISAAC V. BROWER,
MARTIN E. THOMPSON,
EDWIN SMITH,
H. P. BLACKMAN,
WM. C. ARTHUR,
JACOB C. PARSONS,
GORDON L. FORD,
JOHN A. BUNTING,
THOMAS W. HARVEY,
HENRY SPEAR,
WM. EBBITT,
JOHN G. BELL,
GEO. C. MANN,
F. W. GEISSENHAINER, JR.,
LEWIS G. MORRIS,
JOHN M. REED,
PETER B. MEAD,
PAUL STILLMAN,
MARCUS L. WARD,
BENJAMIN AYCRIGG,
C. F. LINDSLEY,
ADONIRAM CHANDLER, *ex-officio,*
Managers.

JOHN W. CHAMBERS,
Sec. to Board of Managers.

New-York, January 15, 1852.

REPORT OF THE COMMITTEE ON AGRICULTURE.

The Agricultural Committee of the American Institute, on its 24th annual exhibition of cattle, submit the following report:

The exhibition was held as announced in the programme, on the 15th, 16th and 17th of October 1851, at Madison Cottage, on the 5th avenue, between 23d and 24th streets, occupying at least one third more ground than on any similar exhibition, and for which we were indebted to Mr. Samuel Howland, who kindly consented we should use it without charge. The arrangements for the accommodation of stock were made in accordance with a plan furnished by your committee, and submitted to sundry carpenters for estimates. These estimates varied from $250 to $1,200; the contractors to furnish all the materials necessary, and to do all the work required for the stalls, pens, coops, &c., and to remove the same at their own expense. Messrs. Christie and Bogart's estimate being the lowest, was accepted by us. The work was not only well done and within the time limited, but to our entire satisfaction.

When we consider the great increase of horses, horned cattle of every description, swine and sheep, compared with the exhibition of the previous year; and the superior arrangement for their accommodation in every particular, we feel that your Committee have been benefited by carrying out the suggestions made in the report of last year, on the subject. We attach a drawing of the plan with specifications to this report, marked A. for the benefit of future reference. The whole number of horses entered were 54; horned stock 147; sheep 130; swine 46; mules and Jacks 7; poultry 44 entrances; dogs 12. There were in addition to the above 17 head of horned stock on exhibition, belonging to a member of the committee, the rules of the Institute prohibited members of the committee from receiving any premiums, or to be considered competitors for any stock they may exhibit; for this reason they were omitted to be named in the catalogue. On reference to, and comparing the last year's report with the present, you will find an increase of, 37 horned cattle; 73 sheep; 43 swine, 2 mules and jacks; and 10 of poultry, in favor of the present year. Notwithstanding the excessive drought, the quality and appearance of the animals (with the exception of beef cattle) was as much better as their number was greater than at any former exhibition. We will here remark that the cause for the falling off in the beef cattle and fat sheep department, was owing to a rule adopted by the Board of Agriculture: that all persons entitled to a premium for fat cattle and fat sheep, should be breeders of the same, and the owners at the time of exhibition. This is an error, and will be corrected in our next annual list for premiums; which as a rule is very seldom the case, as a fattening farmer is very seldom a breeding farmer. We also recommend an increase of the number and amount of premiums to be awarded on farms and gardens; and especially in the horse department, which were not provided for heretofore. Your committee would further recommend that a much larger field be procured next year, especially for the use of the horse department, to give room to display their qualities in action.

We propose to raise the admission fee for visitors to 25 cents, instead of 12½ cents, and that the catalogue of entrances should be printed with pedigree, breeder and owner, and sold as it was this year; for the making up of which we are entirely indebted to the exertions of Mr. George S. Riggs, who also kindly assisted us in many other ways in carrying out the exhibition.

We would further recommend that in preparing the programme for the next year, that the horse should be first in order, as his noble, and useful character justly entitles him to be; and that a regular list of premiums be offered on native stock, which was altogether omitted the present year.

Attached to this report will be found the names, and residences of the successful competitors, and also the names and residences of the acting judges; and where any special remarks were made by judges out of the ordinary report, it will be set forth under the proper head. We had delegates from numerous state and county societies. Several members of the Board of agriculture were in attendance and aided us materially. We are much indebted to Mr. Thomas Bell of Morrisania, whom we solicited to perform the arduous duty of locating the horned animals as they came in, also to act as superintendent of that department, all which he did to admiration, giving satisfaction to all exhibitors.

The following is a statement of the receipts and expenditures at the cattle show:

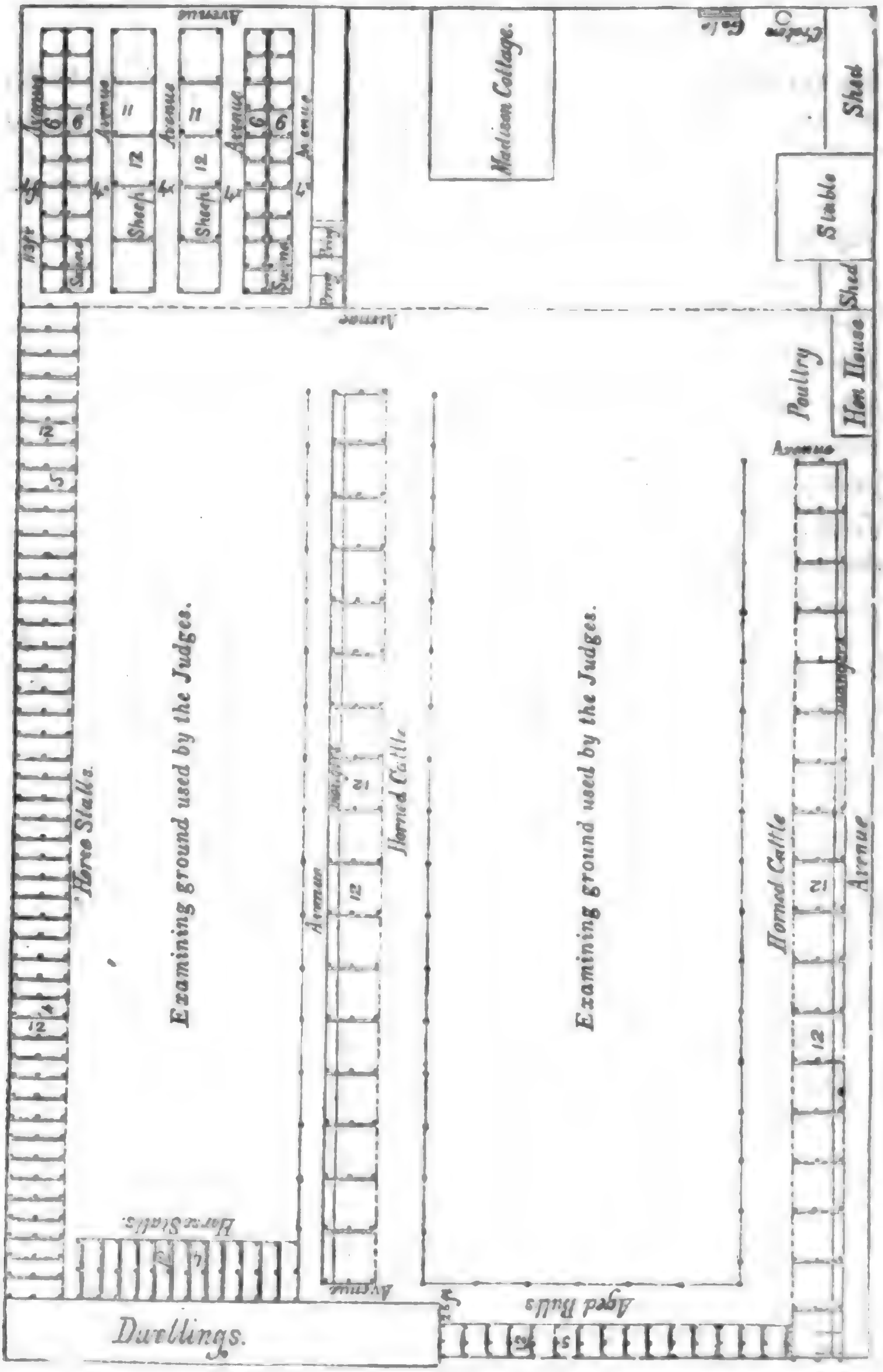
Receipts.		
From sales of tickets,		$707 53
" " of catalogue,		13 50
Expenditures.		$721 03
Erecting sheds, pens, &c.,	$271 00	
Plan of ground,	15 00	
Printing catalogue,	14 00	
Advertising, (extra,)	170 00	
Clerk, laborers, &c.,	56 00	
Printing,	68 60	
Rosettes for cattle and ribbon,	12 29	
Refreshments for judges and committees,	88 37	
Tubs, pails, &c.,	20 23	
Expenses by committee,	4 50	
		719 49
Excess of receipts and expenditures,		$1 54

We suggest and strongly recommend, that all the arrangements for preparing the next year's premium list, should be completed at a much earlier date than formerly, and that it should be published in outline or detail in all the principal agricultural journals throughout the Union, and that a catalogue of premiums be addressed, to all the officers and prominent members of every State and county agricultural society throughout the Union.

All of which is respectfully submitted,

LEWIS G. MORRIS,
DAVID BANKS,
JAMES DE PEYSTER,
ROBERT S. LIVINGSTON.
Committee on Agriculture.

Plan of the ground, with stalls, sheds, pens, &c., erected by the Agricultural committee of the American Institute for the accommodation of the Annual Exhibition of pure breed and other stock, October 1851, the whole occupying an average space of 200 by 250 feet. The horned cattle and horses were all protected from the sun and rain by adequate roofs.


Avenue
Avenue
6
6
Avenue
11
12
Sheep
Avenue
11
12
Sheep
Avenue
6
6
Avenue
Swine
Swine
Madison Cottage
Shed
Stable
Shed
Avenue
Poultry
Hen House
Avenue
12
Horse Stalls
Examining ground used by the Judges.
Avenue
Horned Cattle
12
Examining ground used by the Judges.
Horned Cattle
Avenue
12
12
Horse Stalls
Avenue
Aged Bulls
Dwellings.

SPECIFICATION

For the carpenter's work, in constructing sheds, pens, stalls, &c., for the Cattle Show.

Lumber to be furnished by the contractor. Boards 1 inch rough spruce; 1¼ plank for plates for the roofs of sheds; the roofs to be laid with rough boards with battins over the joints; partitions between the sheds for cattle to be three boards high, say three feet six inches, with three posts in depth; roofs to have sufficient pitch to carry the water off; mangers the whole width of the stalls for feed, two feet six inches from the ground; scaffold poles or timber fixed for tying the cattle to; the posts to be three by four joists; the stalls for horses to have the partitions between each closed up tight with three posts in depth; stalls for aged bulls to be the same as for horses, with rings and staples for tying; pens for sheep and hogs to be without roofs; the partitions to be three feet six inches high with three by four joists for posts, all to be put up strong and in a workmanlike manner; the materials to be removed by the contractor within ten days after the close of the fair; the work to be done to the satisfaction of the committee; rings and staples to be furnished by the committee; contractor to put them in, and return them to the committee at the close of the fair.

HORTICULTURAL REPORT

OF THE

Twenty-Fourth Annual Fair of the American Institute.

The year 1851 will always be remembered for the number and magnitude of its fairs. Aside from the stupendous exhibition in London, in which American industry and skill bore a distinguished part, and carried off a large share of honors in competition with the world, there was a larger number of fairs in our own country than has ever been known in any former period of our history. This circumstance is peculiarly gratifying, as showing that the subject is beginning to take a strong hold of the public mind, and will receive that attention which its importance demands. Several of these fairs I visited, and notwithstanding the unpropitious season, was much gratified with what I saw, as well as with the spirit manifested at these interesting gatherings, Having had abundant opportunities of judging, not only the present season, but for many years past, I am prepared to claim for the Twenty-fourth Annual Fair of the American Institute a high place in the first rank of industrial exhibitions.

Before proceeding with the proper subject of this report, I would allude to a statement going the rounds of the papers, that we are to have a World's Exhibition in New-York, in 1852. I have learned from other sources, that an appplication will be made for Madison Square, where it is proposed to erect a glass structure some six hundred feet in length! What a World's Fair that will be! Why, New-York alone would have no chance at all of being fairly represented in it. My experience gives me a right to speak, and I wish to state, briefly, my decided conviction that the movement is premature, ill digested, and ill conceived. The world will not be prepared for another World's Fair quite so soon; and the political horizon indicates pretty clearly, that the world, for some time to come, will be busied in getting up something very different from *peaceful* exhibitions. No; the year 1852 will be no time for holding a World's Fair; 1855 will be time enough for that. This movement is certainly not of the right kind, and did not have its beginning in the right place. Unless it is proposed to make us supremely ridiculous, this subject must be based on larger conceptions, and be somewhat national in its character. At all events, this *petit* World's Fair in Madison Square will do us no credit as a nation, and I therefore hope the matter will be dropped for the present. One word more. I have also learned that Mr. Paxton is to be employed as the architect of the six hundred feet Crystal Palace proposed to be erected in Madison Square. I hope Mr. Paxton will have the good sense to decline, not only in this, but in any other case. He can well afford to rest on the well-earned fame he has already acquired, and let us see what we can do. But to proceed with the proper subject of the report.

I have already stated that the 24th Annual Fair, as a whole, deserves a high place in the first rank of industrial exhibitions. The display in the horticultural department, exceeded my most sanguine expectations; indeed, it seemed almost impossible, under the circumstances, to get together so many articles of decided merit. The long and remarkable drought had filled me with apprehensions of a failure; but these very apprehensions led to redoubled efforts, and the result was one of the best horticultural exhibitions we have ever had. On all hands, I was met by friends with the remark, "that they would do their best," and the event was most creditable to them and to the Institute. I desire here to thank them in the name of the Institute. It is worthy of remark, that most of the finest horticultural products, such as potatoes, carrots, beets, cabbage, &c., were grown on low, alluvial land, which may be relied on for abundant crops in the driest of seasons. There are thousands of acres of alluvial land in the vicinity of New-York, which still remain in a state of nature, its real value being little comprehended by the great majority of our farmers. A few more droughts like that of the past season will perhaps serve to convince them of its importance, and show them conclusively, that for clearing and draining they will be amply remunerated. Some little observation has convinced me, too, that the past drought has not been without its usefulness in another particular: it has shown clearly the great value of sub-soil plowing. Experience has convinced me of the many and great benefits of working the ground deep and thoroughly, and not the least of its benefits is this, that in a dry season it enables the ground to absorb freely the moisture and gases in which the atmosphere always abounds.

I will now glance briefly at some of the more important products exhibited in the horticultural department. And first of agricultural products, among which Indian corn must take the first place, Of this most useful and important of the cereals, the display was much larger, and, as a whole, much finer than we have ever had before. The varieties shown were very numerous, but it seems to me that some of them might very well be dispensed with in this and surrounding localities. I should like to see the varieties in this vicinity reduced to five or six of the best, and the attention of our farmers directed to the importance of these. Stowell's evergreen sweet corn attracted a large share of attention. It is certainly a most desirable variety for the table, and by far the most prolific that I have ever seen; but in one particular it has been somewhat over estimated. Though it retains the milky state for a long time without any unusual care, it cannot be kept through the winter without a degree of trouble which few will bestow upon it. The chief difficulty is its tendency to mildew; and this is so great that it is necessary to dry it in an oven or by a stove in order to preserve it for seed. In regard to its prolificness, I will state that I grew it in a moderately stiff loam, which had been used for several years as a cow yard. This was trenched two spades deep, and sprinkled with ashes. The corn was planted about the middle of June, in rows four feet apart, and *three* inches only in the rows; and yet, notwithstanding the late period at which it was planted, the drought, and its closeness in the rows, it grew ten feet high, and produced *five* large, well filled ears to the stalk. I will just add, that no earth was drawn to the stalks. I never hill either corn, potatoes, tomatoes, pumpkins, or any thing of the kind, except on low, wet ground: it is labor thrown away, if not worse.

I will next notice the wheat. Of this important cereal, the display was exceedingly fine, and I noticed two new kinds of great excellence, the Australian, and another, the name of which has escaped me, both samples, however, too small for competition. This is the more to be regretted, since they were both of great merit, and I must in justice add, that the Australian wheat was pronounced by the judges to be decidedly the best in the room. In addition to the above, there were samples of Bergen, Mediterranean, &c., of superior quality.

I have a new feature to present here, which gives me no little gratification. A new class of farmers are rising in our midst; I mean *lady farmers.* For instance, the lady of General Sandford, of Sing Sing, sent a barrel of Wheat, which, though not the best, was a good solid article of fine quality. I give her the credit, because I have the best of authority for saying that *she* is the farmer, and not the general. And then, again, the first premium on rye was taken by a lady, Mrs. *Harris*, of Matteawan Point; so also, the first premium on Barley, a splendid article, was taken by Miss *Emma R. Purse*, of Newark, N. J., who had also on exhibition several samples of Wine. With the exception of the splendid Emir Barley mentioned above, the samples of Rye, Oats, and other Agricultural products, were much the same as at former exhibitions. It may be added that we had a very tall specimen of Oats from California, measuring some six feet in height. The stalks were cut while green, rolled up, packed in a small box, and travelled thus 6,000 miles, being sufficiently elastic when they arrived, to assume their upright habit. This sample was more valuable for its straw than for its grain. There was also a sample of Oats from Scotland, brought by Mr. Bell, with other Agricultural products, on his return from his late visit to Europe.

I will now pass to *Flour and Meal.* The samples were not quite so numerous as at our last Fair, but there was no falling off in quality, or in sharpness of competition. Most of the samples exhibited were manufactured specially for competition, and were surpassingly fine. Even the fourth best would, in the market, be denominated extra superfine. As on former occasions, Messrs. Hecker & Brothers were first in the field. There were some beautiful specimens of steam-dried Meal. The process of steam-drying seems now to be generally practiced, and possesses this great advantage, that it dries the meal more thoroughly than others without destroying its intrinsic qualities. Meal is an article of large consumption, and when properly dried will find a good market abroad; the great drawback now is, that on long voyages it becomes musty and useless; we should, therefore, offer every inducement for improvements in the process of drying it. It will be proper to state here, that there were fine specimens of Hominy, &c., from the American Phalanx, but in quantities quite too small for competition. It is much to be wished that those who intend to send articles for competition would possess themselves of one of our premium lists, in order that they may know the quantity of each article to send; this would obviate one cause of dissatisfaction, and relieve us from much perplexity. Where the article is intended for exhibition only, the quantity is of no consequence whatever. Quinby & Co.'s prepared Flour should not be passed over. This would seem to be a very useful article for domestic purposes, whether for bread, cake, or pastry, being converted into either by a very simple process, and in an incredibly short time. The bread and cake I know to be good. Dr. Chilton has analyzed this preparation, and pronounces it to be a wholesome article of food. There were several fine samples of Buckwheat, and one from Platt's mills of extra superfine quality. Passing over articles of less importance, I must allude to a large and beautiful display of Farina, Wheaten Grits, Samp, Hominy, &c., from Hecker & Brothers.

Though the display of Flour and Meal has always been large, I have good reason to know that it could be greatly increased. The difficulty is, that some of the exhibitors, at great labor and expense, and by oft repeated manipulations, prepare their specimens expressly for competition; this the majority of makers are not willing to do; and knowing that otherwise they stand no chance at all, they keep away altogether. I have been assured that they are willing to exhibit a fair sample of the brands they generally send to market, if others are compelled to do the same, but not otherwise. I can only repeat here what I said on a former occasion, that this is a subject in which the public feel no little interest, it being important to them not to know how fine flour can be made, but who sends the best to market. It ought to be legitimately inferred, that he who can make the best, really does send the best to market, though it may be that such is really not the case. All I am anxious for is to have this matter placed upon a proper footing.

Of *Dairy Productions* the display was very respectable. There were numerous samples of cheese, some of very superior quality, many that would pass for good any where, and a few decidedly bad. Why men will send such rank specimens to an exhibition of this kind passes my comprehension; they must have wretched bad taste. The samples of butter were not quite equal to those of last year. The season had doubtless much to do with this.

The display of vegetables was very much better than could have been anticipated; indeed, I doubt whether finer potatoes, cattle roots, beets, carrots, parsnips, salsify, tomatoes, onions, &c., have ever been seen. Most of these, however, were grown on low alluvial land, where the influence of the long continued drought was not much felt; and such a drought, we have had nothing like it in twenty years; wells were dried up, springs ceased their bubbling, running brooks were nowhere to be seen, the fields changed their green robes for a Quaker drab, the forest trees dropped their foliage before the time of the "sear and yellow leaf;" many fine specimens of shrubbery were killed, and all nature seemed to be dying under the influence of the withering drought. May we never see its like again. Under such circumstances as these the peculiar value of low, alluvial lands makes itself apparent. But to proceed. In addition to the products named above, I must mention particularly some enormous heads of Cauliflower. These were raised at Cambridge, near Boston, and were the most beautiful I ever saw. The display of Cabbage was not large, but there were some flat Dutch and American Bergen of great size, and as solid as a stone. The show of Pumpkins and Squashes was remarkably fine. Some weighed not far from 200 pounds; but, notwithstanding their great size, the flesh was fine and tender, and made capital pies, as I have abundantly satisfied myself. Among other things, I must make mention of specimens of three varieties of Beets, curious, but very pretty, and of the most brilliant colors. They were presented by a lady of Westchester county, who grows them as ornamental plants. From what I saw, I should judge them to be rather fibrous than tap rooted plants; but it seemed to me that the leaf stalks, if properly blanched, would make a tender and delicate table luxury. As the lady has kindly promised to send me some seed, I shall be able to satisfy myself in regard to this in the course of another year. There were several other varieties of vegetables, which, however, it is scarcely necessary to mention here particularly; but I must add a few words more in justice to exhibitors. After the judges have given their decisions, there always remains a large number of articles of much excellence, and some of them almost, if not quite as good as those which have received their appropriate award. For example: after the judges had selected the two best lots of potatoes, there remained some twenty odd samples unprovided for, at leat two-thirds of which were very excellent, with little or no difference between them. It cannot, of course, be expected that all should receive premiums, and I only allude to the subject to let exhibitors know that all articles of excellence are duly appreciated, though all do not receive an award. What is here said of potatoes will apply to a great many other things.

The display of *fruit* was really superb, and brought to remembrance the grand show made during the sitting of the Pomological Congress. It would have been considered a beautiful exhibition even in the most favorable season, but under the circumstances could scarcely have been anticipated. Messrs. Mackintosh, Hovey, Bailey, Colt, and other extensive exhibitors deserve a large share of praise for the really beautiful display which they made. There were many very fine specimens of apples, and among them some seedlings of merit. The show of pears was uncommonly good. More beautiful specimens of Duchesse d'Angoulême, Seckel, White Doyenné, Bartlett, Bergamot, &c., have never been seen. The display of *peaches* was not as large as that of last year. The drought had ripened them prematurely, but, notwithstanding, we had some beautiful specimens, of large size and fine flavor, the best of which were seedlings. The display of *quinces* was unusually large and fine. The largest exhibitor was Mrs. Eliza Peck, of Southington, Conn., who deserves much praise for her enterprise and energy. Though her's were not the best specimen quinces, they were remarkably fine, and only surpassed by those from Croton Point. There were many other samples decidedly good; indeed, I never before saw so many fine quinces on any occasion. The drought and the curculio made sad havoc with plums; still we had a sample of seedlings of much excellence, and remarkably prolific. We had, singularly enough, quite a fine show of raspberries. The drought, and some genial rains early in the autumn, had the effect of causing the Antwerp raspberry, in some localities, to produce a second time quite abundantly. This may have been the case with other varieties, but all that I saw were Antwerps. We had some fine samples from Mr. Jordan L. Mott, of Motthaven, Mrs. Woolsey, of Bedford, L. I., and others. Several plates of large and well-ripened Figs added considerably to the interest of our exhibition, and still more so, a large sample of well-matured and excellent Madeira Nuts, raised in New-York city by Mr. Tonnelé. Mr. Knowlton, of Clinton Avenue, Brooklyn, ripens not only these, but also Almonds, Prunes, and other novelties. When it is well ascertained that these things can be matured with tolerable certainty, their general introduction will add considerably to the interest of the fruit garden. The display of Foreign Grapes, though remarkably good in regard to quality, was not as large as it should have been, but still quite as large as we usually have. There should have been more samples, because more Foreign Grapes are now grown than ever before, particularly in the vicinity of New-York; but their culture is generally expensive, and a silver medal is scarcely enough to bring them out for a four weeks' exhibition. This remark will hold good of many other things. The display of *Native Grapes*, however, was large and really beautiful. The season was favorable, and better Grapes, as respects both size and flavor, I never saw. The bunches and berries were uncommonly large, and the flavor superb. A seedling of much excellence, resembling the Catawba, promises to be an acquisition. The Native Grape must be our chief dependence for general consumption, and it is gratifying to see a small vineyard springing up here and there, the beginnings of something more to come. The Grape, in my opinion, is one of the most profitable crops that can be raised near a large city, as it is one of the most certain, and it is a little surprising that more do not enter into its culture. I predict "a good time coming," however, when the Grape will be so extensively cultivated that every man, woman, and child will be able to eat of the vine, though they may not repose under a fig tree.

Passing over things of less importance, I must allude briefly to a magnificent display of Model Fruit, prepared by Mr. Townend Glover of Fishkill Landing. In order to give some idea of its magnitude, I will mention that he exhibited 108 specimens of Apples, 153 of Pears, 201 of Strawberries, 66 of Insects, 156 of Cherries, and 217 of Plums, Nectarines, Apricots, &c.—in all 901 specimens. The above are only about half that he sent, there being no convenience for showing the remainder. These model specimens attracted a great deal of attention; and they were made with such inimitable truthfulness, that it was difficult to distinguish them from real fruit. A fruit-grower who visited the World's Fair, and who examined these specimens with a critical eye, informed me that he saw nothing there that equalled them. This is high praise, but well deserved. The great utility of such a collection of truthful specimens will be readily understood by the merest tyros in fruit growing. Every horticultural society in the country should have a collection; and I may add that Mr. Glover is now employed in making one for the Massachusetts Horticultural Society, and others. Let me here earnestly call the attention of the Institute to the propriety of possessing itself of such a collection. It needs no argument from me to prove its great value, for this must be well understood and appreciated by all. It does seem to me that a sum appropriated to this purpose will better subserve one of the important objects for which the Institute was founded, than in any other way whatever. May I not hope, that at the least a committee will be appointed to inquire into its expediency?

One of the most interesting features of the Horticultural Department still remains to be noticed. Nothing would be so much missed, nothing would detract so much from the general character of the Fair, as the absence of Flowers. Being, as they are, objects of universal admiration, they excite more interest, and attract a larger number of visitors, than any other one thing, not excepting even the Fruit. The Fruit and the Flowers may be said to constitute the chief center of attraction. So long as a good display of these interesting objects can be secured, so long will the Fairs of the American Institute retain their interest in the public mind. On the present occasion we had not only a large, but a very beautiful display of Flowers; much better, indeed, than the season gave promise of. The much-needed rains in the fall insured us a fair representation of Dahlias and Roses, which constitute the chief objects of interest at this season of the year, though there are others of great beauty. Dahlias, at the opening of the Fair, showed the effects of the drought very plainly, being small and badly developed; but this did not continue long, for in a few days a decided improvement was clearly perceptible, both in size and form. I ought to state, however, that two or three stands were good from the beginning; but the exhibitors, in these cases, had watered their plants freely with Croton; a labor of no small magnitude. Altogether, the display of Dahlias was a very beautiful affair. The show of roses was very large, and every way fine. Two of the exhibitors kept on their stands upward of 500 Roses, during the whole four weeks of the Fair, making a magnificent display of this lovely flower, for which they deserve much praise. There were other stands of smaller size, but still very pretty. The great beauty and grateful fragrance of the Rose, and the many associations connected with it, have made it the universal favorite among flowers, and there is no probability that another will ever usurp its place, so that in one particular it may be taken as the emblem of constancy. There was a grand display of Bouquets, very much the largest and finest that I have yet seen. I ought to state, and I do it with much gratification, that Mrs. Smith of Sydney Place, Brooklyn, sent us upward of *twenty* Bouquets of much beauty, and containing many choice flowers. The most interesting fact is, that many of these Bouquets were arranged while she was confined to her bed by illness. So much energy under such circumstances, deserves more praise than mere words. Two large Bouquets of Natural Grasses, presented by Mrs. ——, of Williamsburgh, were arranged with much good taste, and made a unique and beautiful appearance. In connection with Bouquets may be mentioned several Baskets of Flowers, one of which, of large size, and most tastefully arranged with the choicest flowers, presented, during the whole Fair, a most charming appearance. It gives me pleasure here to acknowledge the receipt, on the last day of the Fair, of a splendid basket of Flowers, most tastefully arranged by Mrs. Henderson, of Middle Village, L. I. Here, too, may be mentioned several *Pyramids*, one of which, of great size, and in the temple form, was beautiful in design, and elaborate in finish. A great many other pretty things might be noticed, such as *Passifloras*, several blooms of *Cereus triangularis*, *Salvias*, &c., &c., *ad infinitum*; but a mere allusion to them must suffice.

The special exhibition on Monday, Oct. 13, brought out a rare and beautiful display of *dahlias, roses, bouquets and baskets*. The dahlias and roses were remarkably fine, the number of exhibitors large, and the competition spirited and close. The bouquets and baskets were a new feature in the special exhibition, and one that should be continued. Besides adding immensely to the interest of the scene, an opportunity is presented for a display of taste which will never be seen at our general show, at least until we can afford to be a little more liberal than we are at present. It would be absurd in the highest degree to expect it. The bouquets shown on this occasion were surprisingly beautiful, and elicited a degree of admiration that I have never seen called forth on any occasion before. The flowers were the rarest and choicest, the arrangement exquisite, and the form, without stiffness or formality, seemed every thing that could be desired. Of course all were not alike perfect; I am now only speaking of the best. Among the baskets, one, which may be called a rock work basket, was pre-eminently beautiful. There were others, of smaller size, which were gems of their kind. As a whole, this special exhibition was much the most beautiful and interesting that we have yet had.

In closing this brief description of flowers, I must return the thanks of the Institute to Messrs Thorburn, Hogg and others, for several large contributions of rare and beautiful flowers, which served very materially to increase the attractions of the Horticultural department. The liberality and public spirit of those gentlemen are well known, and need no comment from me.

Miscellaneous articles next claim a small share of attention. With two or three exceptions, I have not the remotest idea of enumerating these, further than to state that their name is legion. *Pickles and Preserves* deserve to be specially noticed, not only because they were got up in beautiful style and made a fine show, but because of their intrinsic excellence. The Plums, Strawberries, Raspberries, &c., were excellent, but the Peaches were superb. While among the sweet things, I will dispose of the *Honey*. A sample of wild honey may have been very good; it had a rich smell, but was so wormy that the judges declined tasting it. The best honey was made from artificial food in one of Gilmore's patent aviaries. This aviary has been examined with much care by competent judges, and it is their opinion that it possesses important advantages, over any other now in use. It is constructed somewhat on socialist principles, being, in fact, a community of hives. The advantage of this is, that an indefinite number of swarms can work in one inclosure without interfering with each other. Its mechanism cannot well be understood without a model or a diagram, but I have had opportunities of satisfying myself that it possesses, practically, all the merits claimed for it. One of the advantages of the artificial food is, that being placed near at hand, there is a great saving of labor and time, and consequently, a corresponding increase in the quantity of honey made; that is to say, the bees thus fed, will in a given time make more honey than by any other mode now known. The cost of the food is said to be trifling; it is of different qualities, and so of course, is the honey, but the best is of fine flavor and very superior quality.

In conclusion I will notice some *Flower Pots*, and a display of *Rustic Work*. The flower pots were something of a novelty, without the usual hole for drainage, but having instead a false bottom perforated with small holes. It seems to me that these pots are well adapted for growing some kinds of plants, particularly in rooms; but I shall refrain from giving an opinion in regard to their merits until I have had an opportunity of trying them. The *Rustic Work* was a curious, but, on the whole, pretty display, embracing some articles of great utility, such as brackets, stands, chairs, &c., and others of no utility at all. The materials used were principally knots and gnarled branches, which were worked up into various forms, some pretty, some classic, some grotesque, and some quite repulsive. The labor bestowed on these articles was very considerable, and in many cases a great deal of ingenuity and taste was displayed, both in form and finish. Rustic work has so many attractive features, that it is greatly to be regretted that its expensiveness has hitherto precluded its general introduction.

I must here state that a small glass jar of "Kentish's Prepared Guano" was exhibited, marked "For Competition." Now competition supposes comparison with something of a like kind, and in this case comparison based upon the results of a series of experiments covering no inconsiderable space of time, and embracing a great variety of vegetable productions; but it must be apparent to all that no such comparison could be instituted in the circumstances under which this Guano was exhibited. I make this statement to show that the subject was not overlooked. If the proprietor will furnish the Institute a suitable supply at the proper time, I will answer for it that it receives a fair trial with other fertilizers of a like kind.

I have thus briefly attempted to give some general ideas of the character of the various objects exhibited in the Horticultural Department during the 24th Annual Fair, and I feel greatly relieved now that the task is done; for though full of pleasant reminiscences, the labor has not been light, with many other cares pressing upon me. I did what I could to make the Exhibition respectable, and I am not without my reward in the consciousness that I succeeded in some tolerable degree. To the exhibitors, more especially of fruits and flowers, belongs a large meed of praise, and I render it with peculiar gratification. And here, at this particular point, I would again urge upon the Institute the propriety, and even necessity, of taking another step forward. Comparisons are said to be odious; some are so decidedly, and I do not mean to make them; but I do take upon myself to say, emphatically, that in some particulars the premiums offered in this department are still of too low a grade, and altogether inadequate, not only to the merits of the articles shown, but to the labor and loss sustained by the exhibitors themselves; and I will add, that, comparatively, they are less than in any other department of the Institute. Let the importance of each, and its bearings upon the wants and necessities of mankind, be borne in mind, and then tell me if there are not some articles in the Horticultural Department quite as deserving of a gold medal as a Daguerreotype. I repeat that the time has arrived when it behooves the Institute to take another step forward in the path of justice and liberality, and it can now afford to do so. Should I be connected with this department another year, it will become my duty to present to the Institute a premium list, so modified as to meet an existing necessity, and which, I entertain not a doubt, will receive its approval. I think this can be done so as to subserve the ends of justice without materially increasing our expenses.

I had hoped, in presenting another Report, that I should have the pleasure of congratulating the Institute on the incorporation of an Agricultural College, but the hope has proved a vain one. Some inquiry has convinced me that, for the present, the project must be laid aside, but not abandoned. I have examined most of the arguments urged against such an institution, but, to my apprehension, none of them are insuperable. I am still of opinion that an Agricultural College, properly planned, is a great desideratum, and I shall therefore do what I can to keep the subject fresh in the public mind. I have heard a plan suggested, by which many of the advantages of an Agricultural College can be secured in a very desirable way; but as the gentleman who has this project in hand will soon bring it before the Institute, I shall not forestall him.

There remains still another way in which the Institute can promote the cause of Botanical Science, as well as some other sciences intimately connected with it: I mean by the establishment of a Botanical Garden, with the aid of the State, if it chooses to aid us; without it, if it will not. During the last session of the Scientific Congress, this subject presented itself to my mind in a very forcible manner. Some topic, I now forget what, came before this body of learned *savans*, in the elucidation of which was wanted precisely that kind of knowledge which a Botanical Garden is peculiarly fitted to afford. I thought then, and think now, that the establishment of such a garden should be made a leading object with the American Institute. I had intended to indicate some of the benefits to be derived from a Botanical Garden, and to mark out a plan for one; but I have neither space nor time to spare to the subject at this moment, and must consequently defer it for a brief period. I hope to be able to convince the members of the Institute, that it is both feasible and desirable.

In conclusion, let me add once more my best wishes for the continued prosperity of the Institute, and the interests committed to its care.

All of which is respectfully submitted,

PETER B. MEAD,
Chair. of Com. on Hort.

REPORTS OF THE COMMITTEE ON FARMS.

Report of the Committee on the Farm of Elijah H. Kimball, *at Flatlands, L. I.*

The Committee on farms, appointed by the Board of Agriculture of the American Institute, to examine the farms offered in ompetition for the premium, "For the best cultivated Farm," respectfully report, that

Your Committee on the 6th of September, visited the farm of Elijah H Kimball, Esq., in the town of Flatlands, Kings county, Long Island, about 7½ miles from Fulton Ferry. This farm is bounded on the south-east by a creek or bog, north-east by a small fresh water creek running into the bog, and westerly by a broad avenue, and contains about 100 acres of arable or plough land, not including a large tract of salt meadow covered with a rich crop of black grass. With the exception of the boundary fence, there are none on the farm. Mr. K. has adopted the soiling system, so common in England, it having many advantages on a farm like his. The cattle are kept in a yard, and fed from one quarter of the ground required to pasture them, if permitted to run at large in the field, to destroy more than they consume; they will give more milk and keep in better order, especially in hot weather, as they can resort to the sheds, and be protected from the scorching rays of the sun. There is another important item gained by yarding cattle—the saving of the manure. This alone is worth all the labor and expense of cutting and carrying the grass to the yard.

The lawn in front and the yards in the rear of the house, contain about four acres; the former contains almost every species of evergreen, and other trees, so arranged as to present a most agreeable variety at all seasons.

There are about twelve acres devoted to the cultivation of fruit and vegetables. The fruits consist of strawberries, raspberries, currants, gooseberries, peaches, pears, quinces, and grapes. The peach orchard has about 260 trees, covering less than one acre, and was set out originally with a view to test their growth on that side of Long Island, and to raise sufficient, at least, for home consumption. Your Committee walked through this orchard with great pleasure, and found the trees in perfect health and vigor, with no symptoms of disease, no appearance of gum or blight, and most of them loaded with fruit; and it is needless to add, we helped ourselves most bountifully to the delicious fruit. Mr. K. informed us that this orchard, this season, yielded 145 baskets of beautiful fruit, and that his experiment has been not only successful, but profitable. His treatment of the peach tree is as follows: every spring the earth is removed from the trunk of the tree two or three feet, and Moss Bunkers, or bony fish deposited around them; that simple process gives the trees abundance of food, keeps them in health, dispels the worm, and they yield good crops every year. Your Committee cannot recommend too highly this mode of treating the peach tree, wherever this material can be procured.

Mr. K. has gone extensively into the culture of the pear tree, of which he has more than a thousand grafted upon the quince stock, containing the best varieties, and all were imported from France. We examined about two hundred Virgalieu, or White Doyenné engrafted on the quince stock, which were set out about eighteen months previous to our visit, and upon a majority we found growing from four to twelve pears, all large, beautiful, and free from cracks, to which the Virgalieu has been subject for many years past. These trees are set out eight feet apart, in rows, and the rows are twenty feet distance from each other. The land between the rows is kept in good cultivation, and in addition to the pears, fine crops of strawberries, spinach, cabbage and tomatoes are raised; the quince roots being sure to find their share of the benefit of the top dressing, which is principally intended for their neighbors.

He states that he planted the present year fifteen acres of potatoes, principally Mercer; the average yield was about 125 bushels to the acre; the first potatoes were sent to market on the 20th June, and brought $2.25 per basket; at that time they were not full grown, but the extra price more than compensated for the loss in size. From this time potatoes were sent to market almost daily until the bulk of the crop was sold. The entire crop averaged about one dollar per bushel. The early potatoe ground was cleared of the vines, weeds, and other rubbish and prepared for a second crop, and there is now growing on the same field the Rutabaga and Red top turnip, which are in a flourishing condition, and he estimates that the receipt of the second crop will pay all the expense of cultivating the first. We next visited his cornfield, containing about sixteen acres, and walked through it in various directions and found, on an average, about four stalks to the hill; the ground was well cultivated—very clean and entirely free from weeds. The white flint corn was planted three feet and-a-half distant each way, and the yellow corn three feet; the ears were large and well filled. The corn was planted from the 5th to 20th May, manured in the hill with good barn yard manure and leached ashes mixed. We estimated the yield of the whole crop from fifty-five to sixty bushels the acre.

Seven acres of this farm are devoted to the culture of sugar beets, carrots, parsnips and turnips for cattle, all of which took remarkably well and seemed not to have suffered much from the drought. The hay crop was very large. Kings county has long been celebrated for the superior excellence of its hay, and judging from the appearance of the meadows, and the hay in the barns, we are confident that none could excel it in point of quantity and quality. Mr. K. estimates his entire crop will average two tons and-a-half to the acre.

The crop of wheat was five acres, sowed upon ground from which a potatoe crop had been taken the last season, and manured thoroughly with a compost of barn-yard manure, decayed drift and leached ashes. The seed was the white Bergen wheat, entirely unmixed. The product was thirty-two bushels to the acre, and weighed over sixty pounds. At the time of sowing the wheat the ground was stocked with timothy, and in the spring clover was sown, both of which were in good condition.

On the farm there are about 300 feet of hot beds, and Mr. K. stated that he sold annually lettuce and cucumbers to the amount of about $400. They furnish employment for the men during the winter months, and the same manure is used in the latter part of the summer for a crop of celery, of which he has about twenty thousand plants in a thrifty condition.

Whilst we award to Mr. K. unqualified praise for his good husbandry, fine taste and economical arrangement, we feel bound to say that nature has done much for his farm. In the first place it is level, not a stone upon it, and has very little, if any, waste ground. The soil is a rich sandy loam, continually enriched by the decaying of oyster and clam shells upon it; from the locality, sea weed and drift is thrown directly upon it in great profusion, furnishing a large supply of material for manure, which, from appearances, is turned to the best account. For the convenience of farmers and others in this neighborhood a dock has been built at the extremity of the road, not more than one quarter of a mile from Mr. Kimball's farm, at which dock, sloops, schooners and smaller craft can at all times land their cargoes; all kinds of market stuff can at little expense be carried to the city of New-York, and articles of necessity, and particularly manure taken from the streets of New-York and elsewhere, can be brought back at a very cheap rate, thus affording a ready and easy way of communication to and from the city by water.

We cannot help alluding to another valuable appendage to this farm, although in its nature it partakes more of the maricultural, than of the agricultural. On the southeast boundary line, lies a beautiful oyster pond of about 20 acres, which is kept planted with those celebrated oysters, known in our market as the mill pond. Nature has made this pond almost perfect, it requiring only a very small dam in one or two places to make it complete. Two years ago Mr. K planted 1200 bushels of small oysters, which in addition to the previous stock, filled it, and now supplies his family, and furnishes a large quantity for market, always finding ready purchasers at good prices. The fresh water creek flowing into this pond, is found to be of great advantage in fattening the oysters. Clams, crabs, and fish are found in abundance in the bay adjoining.

In conclusion, your committee report, that (aside from the great natural advantages this farm possesses,) the high state of cultivation to which it has been brought by judicious, practical, and scientific husbandry, entitles Elijah H. Kimball, Esq., to the first premium awarded by the American Institute, for the "best cultivated farm of one hundred acres."

D. BANKS,
JAMES DE PEYSTER,
ALANSON NASH,
Committee on Farms.

New-York, October 21, 1851.

REPORT OF THE COMMITTEE ON THE FARM OF JAMES BATHGATE, FORDHAM, N. Y.

The Committee of the American Institute, who were appointed to view the farms for premiums, respectfully report,

That they visited the farm of James Bathgate, of Fordham, Westchester county, on the 11th day of September last, upon his request.

That this farm consists of one hundred and six acres, and is devoted mostly to the raising of stock and for dairy purposes.

That this farm is situated in the northerly part of the town of Fordham, and where the Croton aqueduct is carried through the entire length of the farm from north to south.

The dwelling house of Mr. Bathgate, is situated on a small hill or rise of ground, beautifully surrounded with trees of various kinds, all enclosed with fences, with the barns and out-houses so situated. that they stand on descending ground, freeing the dwelling house of all nuisances and annoyances from such a source.

During the last winter, Mr. Bathgate and his son, kept and wintered on this farm 90 cows. The milk of these cows in summer and winter is sold at the New-York market. No butter or cheese except what is used by Mr. Bathgate's family is made on this farm. The stock is graded and mixed from the Native, Durham, and Ayrshire races. Some of the milk from Mr. B's. farm is sold as high as six cents a quart; his stock are many of them large and extraordinary milkers, he sold one of his fine cows at the Fair of the American Institute, 1850, for $130.

The present season Mr. B. keeps 60 milch cows, 5 horses, 1 pair of oxen, 4 heifers. The cows yield 400 quarts of milk a day, which is sold in New-York, averaging five cents a quart. Mr. B. states that he has sold fruit from his orchard on the farm to the amount of $600 the present season, and estimates that he will sell $500 worth of hay the coming winter.

The manure which Mr. B. makes on his farm is about 500 cart loads, and is used for the growth of vegetables, and for top dressings of his meadow lands. There is about fifty acres of meadow land on this farm, producing, as he states, 150 tons of hay a season, an apple orchard of ten acres, and a peach orchard of six acres. Mr. B. first planted his peach orchard with early potatoes, which are dug for the New-York market, and then raised turnips on the same, producing two crops a season. He estimates his turnip crop 1,000 bushels. The peach orchard contains 600 to 700 trees. At the time your committee visited the farm of Mr. B., the country was suffering from a long and severe drought, which gave the same a dry and unpropitious appearance; that on passing over a large portion of this farm and seeing it, your committee were well pleased with the fertility and productiveness of the same. Mr. B. and his son kindly pointed out the stock and showed some of their best milkers, which were a cross of the native Ayrshire and Durham races. One extraordinary cow which they showed was a cross from the recent Dutch imported stock and the native. Indeed, as far as your committee have been able to judge, they have come to the conclusion that foreign stock, when crossed on the native cow, produces an offspring far superior for milk and fattening, to either of the originals.

We found the farm of Mr. B. well fenced with stone wall; the same was divided into lots and fields. The stone had been taken out of the lots and used for fencing, which is at once economical and permanent.

Mr. B. senior is a gentleman 84 years of age, and of Scotch birth. He came to the United States when young; is now in good health and full of activity; has been on the farm which he now owns some twenty years. He formerly was extensively engaged in raising blood horses, some of which he sold at very high prices, but such was its precarious returns that he has abandoned it for the milk business.

He and his family entertained your committee with kindness and hospitality, and they found Mr. B.'s residence to be a home for his guests.

Your committee would report that he is entitled to the second premium awarded by the American Institute on farms of 100 acres.

All of which is respectfully submitted.

ALANSON NASH,
DAVID BANKS,
JAMES DEPEYSTER,
Committee on Farms.

New-York, Oct. 25th, 1851.

REPORT OF THE COMMITTEE ON FLOWER GARDENS.

The committee of judges appointed to examine Flower Gardens entered for competition, in connection with the Twenty-fourth Annual Fair of the American Institute, report that three entries were made. The first was a meagre affair, and unworthy of further notice. The second was a garden of some magnitude, and well stocked with choice plants; but as a considerable number of these plants belonged to the chairman of your committee, it was deemed unwise to admit it into competition. Your committee will add, for the sake of justice, that this garden would not be entitled to the first premium, even if it had been admitted, for, notwithstanding it contains many choice plants, it has not been laid out with a view to permanency, and hence with little reference to taste, though the plants are cultivated with much care. The third was that of Edwin G. Stevens, Esq., of Castle Point, Hoboken, for whom Mr. Wm. Cranstown is gardner. This is a really magnificent place, surrounded with beautiful shade trees, and adorned with fine Italian statuary. The garden proper is in the form of an amphitheatre, stocked with the choicest shrubbery and flowering plants. A variety of beautiful figures are cut in the green sward, and the grass kept close shorn, and the edges well trimmed; the walks are kept well rolled, and entirely free from weeds. The whole garden is a model of taste, neatness and order. When viewed from the terrace, the effect is charming indeed. In connection with the garden is a range of green and hot houses, and perhaps the finest Grapery in the country. The whole grounds are alike creditable to the taste and munificence of Mr. Stevens, and the skill and ability of his gardner.

Your committee take great pleasure in stating their opinion, that the large Cup is well merited by Mr. Wm. Cranstown, gardener to Mr. Stevens and they so award it.

The second premium is awarded to Mr. S. Knowlton, of Clinton Avenue, Brooklyn, for a well cultivated garden of choice plants. Mr. Knowlton is an amateur, who occupies a part of his leisure in cultivating his garden, which is kept in remarkable neat order; and though the arrangement of his beds is very simple and unpretending, his plants are choice and well grown. It should be mentioned, also, that he has a collection of very choice fruit, all grown by himself from the graft and bud, among others, Almonds, Madeira nuts and Prunes, which ripen well without protection. Mr. K's garden, was, in fact, entered last year, but owing to the lateness of the season, and other causes, it was deemed advisable to let it lie over till the present.

All of which is respectfully submitted.

PETER B. MEAD,
JAMES A. DEPEYSTER,
H. MEIGS, *Committee.*

REPORT OF THE JUDGES ON TESTING PLOUGHS.

The undersigned judges on testing of ploughs at White Plains on the 7th inst., under directions of the Board of Agriculture of the American Institute, report that we award the following premiums on ploughs:

B. Myer, Newark, N. J., plough No. 9½, furrow 16 inches wide and 8 inches deep. First premium.

John Moore, N. Y., plough No. 21, furrow 16 inches wide and 8 inches deep. Second premium.

John Moore, N. Y, plough No. 19½, furrow 12 inches wide and 6 inches deep. First premium.

John Moore, N. Y., plough No. 19, furrow 12 inches wide and 6 inches deep. Second premium.

We also recommend a special premium or diploma to Messrs. Minor, Horton & Co., for their clipper plough, being well adapted for *clay soil* and *deep ploughing*.

We also recommend a special premium or diploma to Messrs. Eddy & Co., of Union Village, Washington county, for their iron plough, being a superior plough for rough land.

The great importance of deep ploughing requires a suggestion, that in future premiums on ploughs, no premium be awarded for less depth than eight or seven inches ploughing.

RALPH HALL,
THOS. BELL,
NICHOLAS WYCKOFF,
Judges.

New-York, October, 1851.

REPORT OF THE JUDGES ON FINE WOOL SHEEP.

Your committee would favorably notice the very fine Merino stock imported by A. S. Bingham, Esq., of Middlebury, Vermont, and Isaac N. DeForest, of Dover, Dutchess county, to whose successful enterprise the sheep raisers of our country are indebted for such valuable means of improving their stock. We would call upon Americans generally to patronise domestic industry in the encouragement of manufactures of fine cloth, and as we have evidence that the finest of wools can be raised here, and manufactured into the best of materials, is it not just that we, as Americans, should wear them to the exclusion of foreign articles?

Your committee in discharging their duty cannot fail to express the very high gratification they have experienced at the excellence of the stock exhibited, and flatter themselves, that ere long, both sheep raisers and manufacturers of fine cloth, will alike meet their just awards from the hands of their fellow citizens.

OBH. ELLIOT.
CHAS. A. HULL.
JOHN HAROLD.

New-York, October 16, 1851.

REPORT ON DR. BLAKE'S LESSONS IN MODERN FARMING OR AGRICULTURE FOR SCHOOLS.

The committee to whom was referred the book entitled "Lessons in Modern Farming; or Agriculture for Schools; containing scientific exercises for recitation, &c., &c. By Rev. John L. Blake, D. D., New-York. Mark H. Newman & Co. 1851." Respectfully report:

That this work is happily a series of quotations (for the most part) from the best writers and speakers of modern times on Agricultural chemistry. Education, by Judge Buel. Implements, Agriculture, &c., by Edward Everett, James Tufts, Henry Coleman. Agriculture of Maryland, by Willoughby Newton. Agriculture of France, Europe, civilization. The American Farmer, by Josiah Quincy, Jr. Mrs. Hemans. Moral Dignity of American Labor, by Rev. Dr. Tyng, Braynard, Holmes. Verplanck on the American Schoolmaster. On Animal and vegetable food. Bryant. Approved modes of Tillage. Animal Physiology. Animal Manures. Trees, by Howitt. Agriculture, by

Mac Neven. Birds, by Washington Irving, Wilkie. Change of Material Substances, by Dr. Alexander H. Stevens. Chemical Analysis, Mrs. Sigourney. Goldsmith on Decomposition. On Agriculture, E. H. Derby, Longfellow, D. A. Ogden, Rev. E. H. Winslow, Lewis F. Allen, Professor Mapes, Charles Sprague, Professor Norton, A. H. H. Stuart, Secretary of the Interior, Wolcott, Eliza Cook, Alden Bradford, Professor Sanborn, Isaac Hill. History of the Horse, Professor Emmons, Miss Brewer, Marshall P. Wilder, &c., &c.

The author has combined a very large amount of the best materials for giving to young readers—aye, to old ones too, the just appreciation of the noblest work of man, the cultivation of the earth. Instead of a system claimed as usual by authors as original, this book is as much better than an ordinary one man book. as the many distinguished authors collated here, are more valuable than any one of them alone.

We have no hesitation in saying that it is a book worthy the making by any intelligent and honest man—and is worthy of perusal by all men, as well old as young.

HENRY MEIGS,
A. NASH,
Committee.

American Institute, July 3, 1851.

REPORT OF THE COMMITTEE ON COMMERCE ON BARTLETT'S COMMERCIAL AND BANKING TABLES.

The Committee on Commerce of the American Institute, to whom was referred the work of R. M. Bartlett, entitled "Commercial and Banking Tables, &c.," respectfully report:

That your committee regard the work of Mr. Bartlett as one of uncommon extent and excellence. For practical purposes, it is entitled to the highest consideration. Its comprehensiveness, its scrupulous accuracy, its simplicity of method, and its beautiful appearance have excited our surprise and admiration. Its distinguishing merits consist in the introduction of some highly valuable features in its tables. The combination of time and interest affords the greatest possible rapidity in their application. Thus, the interest account current, time, and averaging tables, present, at a glance, the number of days that intervene between the day of settlement, and the day each item of an account becomes due, both backward and forward, together with the interest or discount upon the same.

By the adoption of the decimal system, it is alike applicable to any currency of any country. The answer is always given in units, tens, hundreds, or thousands, whether the question is in federal currency or sterling, or francs, or marks. This admirable generalization prepares it to serve as a standard for mercantile calculations, and an excellent medium through which to secure that extremely desirable object—a uniform and harmonious system of rendering accounts throughout the world.

Your committee have examined this work in comparison with a great variety of other tables, all of which are useful, but chiefly for one or more purposes. The tables of Mr. Bartlett embrace everything of importance to be found in others, and much that is valuable not to be found in any work within their knowledge, whilst they surpass all in utility.

No brief report like the present can give an adequate idea of the value or contents of this work. We have no hesitation in saying that every person whose duties require facility, accuracy, and dispatch, will find it an admirable resource; and to the banker, the accountant, and the merchant, we cordially recommend its adoption; as by that means a uniform system of rendering accounts would at once be secured.

It is an original work of the highest order, worthy of full confidence, and entitled to general patronage.

FREEMAN HUNT,
GEORGE DICKEY,
JOSEPH TORREY,
LUTH R B. WYMAN.
Committee on Commerce.

New-York, Sept. 4, 1851.

REPORT OF THE COMMITTEE ON ARTS AND SCIENCES ON J. K. FISHER'S STEAM CARRIAGE.

Your committee, to whom was referred the consideration of Mr. J. K. Fisher's improvements for plank road steam carriage, beg leave to report as follows:

The carriage, as a whole, presented by Mr. Fisher, embodies a number of new and important improvements, both as regards the application of steam and its general arrangement. Mr. F. has introduced a new method for working steam expansively in the peculiar arrangement of gearing for the same, operated by means of levers connected to the cross head of another engine; and in this case where two engines are used, we think highly successful and effective; the arrangement for cutting off the steam at different parts of the stroke, in connection with other movements of the valve, is equally effective with its main movement. The combination of the radius and parallel rods to afford steadiness to the machine even at high velocities, is certainly a very great improvement, particularly if the machinery and carriage are sustained on springs similar to the arrangement presented in the model; by this arrangement it should be observed that all the weight of the hitherto heavy framing is suspended, thereby giving greater capacity for carrying additional weight or passengers. The whole of the machinery in this plan is under the control and direction of one person, including the tiller for steering the carriage, thereby placing the whole under the guidance and observation of the person in charge.

We consider the model presented by Mr. Fisher for the above purpose, capable, by some slight modifications, of affording a very superior plan for steam carriage on a good level road.

JAMES RENWICK,
HENRY R. DUNHAM,
H. MEIGS,
Committee on Arts and Sciences.

New-York, Sept. 4, 1851.

REPORT ON THE AMERICAN SCHOOL OF MINES,

Proposed to be established under the auspices of the American Institute of New-York. Dr. C. T. Jackson, *Director.*

From the rapid career in which our republic has attained its present elevated rank in the scale of nations; the unbounded resources in agricultural and mineral wealth which lie dormant in its vast domain; the increasing demand for active young men, efficiently educated and capable of developing those resources by means of an enlightened knowledge of agriculture--by the discovery and successful working of quarries and mines—and by the construction or opening of suitable thoroughfares for advantageously conveying their products to a ready and profitable market; and, above all, from the unsurpassed growth, prospective increase, and accessibility of this great emporium, the American Institute has been sensibly impressed with the importance of establishing a "School of Mines," in which can be taught the arts of practical and scientific agriculture, mining and civil engineering, where the sons of farmers, merchants, manufacturers, and others may be properly educated and fitted for a calling respectable and useful to themselves and an honor to their country.

Actuated by these patriotic motives, as well as by the desire to encourage every effort that will tend to promote the true interests of our common country, the Institute cordially approves of the plan contemplated by Dr. Charles T. Jackson of establishing a *School of Mines* at the city of New-York, and confidently recommends this laudable enterprise as highly worthy of the consideration and patronage of the public.

Dr. Jackson proposes to commence such a school as soon as practicable, with two courses of popular lectures, one on *Geology, Mineralogy, Metallurgy and Mining*, and the other on the *Principles of Chemistry*, to be given on alternate evenings; and also with the opening of a laboratory in connection with a lecture room, in which it is proposed to give specific instructions, at stated periods in the day time, in the various branches appertaining to *Agriculture, Geology, Mineralogy, Analytical and Applied Chemistry, Mining, Civil Engineering and Nautical Astronomy*, together with the use and application of the requisite instruments necessary to be employed in the practice of the sciences named above.

The undersigned take pleasure in stating that Dr. Jackson is in possession of an extensive laboratory, complete in all its parts, in apparatus and books, and a splendid collection of minerals, metallic ores, rocks, and organic remains from the most interesting and important localities in the United States, as well as from other parts of the globe, which will be used as far as may be necessary to illustrate the several branches it is proposed to teach. He is favorably and widely known for high attainments and the distinction which has been conferred on him both at home and abroad for the useful and scientific discoveries he has made. He has also been actively employed for many years in making geological surveys of several states of the Union, as well as Mineralogical surveys of our public lands. And, as a practical miner, or as an agricultural and analytical chemist, he is entitled to confidence, and may be safely consulted as occasion may require.

GEORGE BACON,
H. MEIGS,
F. S. KINNEY,
LIV. LIVINGSTON,
Com. of the Am. Institute.

New-York, November 8th, 1851.

HON. CLARKSON CROLIUS, SEN.,

Late Vice President of the American Institute.

It is not our intention to prepare a lengthened or very minutely detailed biography of Colonel Crolius. The services which he rendered in endeavors to promote the industrial interests of our country, his determined and long continued efforts in support of our manufacturing interests, as the true policy of our government, the earnestness with which he devoted his time in efforts to bring out the latent talents of our artisans, his services with others in founding the American Institute, and his active and honorable membership, which was continued to the close of his life, require at our hands at least the tribute of a passing notice.

Col. Crolius was a native of the city of New-York, descended from German ancestors, who settled here one hundred and fifty years since. His grandfather established the first stone-ware manufactory in the United States, and his descendants have continued the business, with much credit, to the present time.

During our Revolutionary war, the father of Col. Crolius, a decided whig, was compelled to leave the city after the defeat of the American troops on Long Island, when Sir William Howe took possession of the city of New-York. His property fell into the hands of the British, and did not come into possession of the family again until the peace of 1783. The two elder brothers of Col. Crolius took part in the Revolutionary war; one in the commissary department, the other as a volunteer, was in the battles of Brooklyn, White Plains, and Monmouth. On the day of the last battle he attached himself to the company of his friend, Captain John Van Dyke, in Colonel Lamb's regiment of artillery, which regiment bore its full share of the brunt of the battle. This was John Crolius, who died a few years since, having reached the age of eighty years.

It will readily be perceived that our friend Colonel Crolius, born of whig parents and nurtured amidst the trying scenes of the Revolution, could not be otherwise than deeply imbued with the principles of Republicanism. He commenced his career in political life at the time our country became divided between federalism and democracy. Although some portion of his family adhered to the views of the former, he early avowed his predilections for the latter, which he supported with great energy and devotion. He was elected a member of the common council from the sixth ward, in which he was born, about the commencement of the present century, and at the time of his demise was the oldest ex-member of our city commonalty. In 1803 he officiated at the laying of the corner stone of the City Hall in the Park, then called the Fields, and was the last surviving member of the common council that performed that ceremony; he was a strenuous advocate for the erection of the edifice. Col. Crolius remained in the common council several years, and was an efficient member in the advocacy of all measures tending to benefit the city.

At the commencement of the war of 1812 he was major in one of our militia regiments, known as "the Adjutant Grneral's Regiment," that officer officiating as its colonel. Col. Crolius resigned his commission in the militia and received an appointment to the same rank in the regular service, was ordered on duty at Governor's Island, in the harbor of New-York. During the absence of Colonel House he had command at that post, as well as the stations at Bath and Sandy Hook. At the close of the war he resumed his regular business. In 1811, May 13th, as General Sachem of Tammany Society, he laid the corner stone of Tammany Hall, that celebrated building which has figured largely in the political history of the times.

Colonel Crolius was early and favorably known as a champion in the ranks of his party; springing from a working ancestry he was with the people as well as one of the people. His party advanced him to a seat in the Legislature, where he most faithfully applied himself in promoting the general welfare. He was for ten years a member of that body from the city of New-York. Colonel Crolius was opposed to the canal scheme, under an honest belief that the State was not at that time in a condition to sustain the expense and debt of its construction; but when it was decided on, he was among the first to meet its advocates in voting the necessary means to continue and complete the gigantic undertaking, and no one greeted its completion more cordially than himself.

In 1825 Colonel Crolius, who was a favorite with the country members, was requested by a committee at the opening of the session to run for the speakership of the Assembly, which he at first declined, but, being repeatedly urged, he consented and received the *unanimous* vote of the House—an occurrence unprecedented in that body. As presiding officer, his impartiality gave great satisfaction to the members. From that peried he manifested a desire to retire from active political life.

In 1828, he engaged with zeal in the formation of the American Institute, and was placed at the head of its Executive committee. In 1829, he was one of the committee appointed to procure its charter. In 1830, he was elected one of its Vice Presidents, which post he held by annual re-election for a period of seven years, when he resigned, but continued an active member of the Institute. There was no member more prompt in his attention to the duties devolving on him, than Colonel Crolius.

As an evidence of the estimation in which he was held by its members, on his resigning the Vice Presidency in 1837, we copy the following resolutions which were unanimously adopted:

"*Resolved*, That the thanks of the American Institute be tendered to Col. Clarkson Crolius, for his faithful discharge of the duties of Vice President for many years, and for his uniform, indefatigable, and able support of the protective system as well at the meetings of the Institute, as in the halls of the Legislature in the early periods of that controversy."

"*Resolved*, That it is due from the members of this Institute, that a permanent record be made of their estimate of the character and services of Col. Crolius, and that these resolutions be inserted on the minutes of the proceedings of the Institute, for a permanent memorial of the estimation in which he was held, and the gratitude which is entertained towards him by all his co-laborers of the Institute."

It is not an every day occurrence that we are called upon to note the departure of a friend or an acquaintance, full in the measure of years allotted to man, of whom we can truly say, "his long life has been devoted, with a singleness of purpose, to the principles he professed." Such, we believe, is strictly true in relation to the gentleman of whom we are speaking.

We have been associated with Col. Crolius in the labors of the American Institute, from its formation until his demise. It is undoubtedly true that his inflexible adherence to principles constituted a prominent trait in his character, and his indefatigable efforts in promoting the objects of the Institution, merited, as they received, the approbation of all its members.

Clarkson Crolius, sen., was born in the city of New-York, October 5th, 1773; was married to Elizabeth Meyer, October 8th, 1793; died October 3d, 1843. His respected consort survives to this day in the enjoyment of comfortable health.

A. C.

DONATION OF BOOKS FROM ALEXANDER VATTEMARE, ESQ.

PARIS, *June* 24, 1851.

To A. CHANDLER,

Corresponding Secretary American Institute :

Dear Sir—I have forwarded to you, care of E. Irving, Esq., the books and pamphlets contained in the enclosed list, presented to the American Institute in the name of the distinguished scientfic gentlemen, Professor Becquerel, Dr. Herpin and Mr. Audot, as a token of their respect for the Society and their hope of seeing uninterrupted scientific intercourse well established between the American Institute and the societies to which they belong, viz: the Central and National Agricultural and Horticultural Societies.

With great respect, yours, &c.

ALEXANDER VATTEMARE.

CATALOGUE OF BOOKS AND PAMPHLETS

Received by the American Institute from Alexander Vattemare, Esq., Paris, June 24, 1851.

[Translated by Henry Meigs.]

History and culture of the Pansy, (Pensée,) the Violet, Auricula and Bear's Ear, with plates, by Ragonet Godefroy. Duodecimo.

History of the Rose, its culture, its poetry, with plates. Duodecimo. Ry Loiseleur Deslongchamps. 421 pages.

Manual for the cultivation of Dahlias. Duod'o. By A. Legrand. 2d edition, revised and corrected, by Pépin, Chief gardener of the Jardin des Plants, Paris. Pages 155. Plates.

Of the genera of Camellia, Rhododendron, Azalia, Acacia, Epaoris, Erica, and of plants of the cold conservatory, in general, their history and culture. By Mr. Ch. Lemaire, aided by Mr. Paillet. Paris. Duod'o, pages 174.

The Fuchsia, its history and culture, with a monograph (brief memoir,) containing a description of 520 species and varieties. Pages 88. Duod'o. Paris. By Mr. Felix Porcher. 2d edition.

Inorganic Manures in general, and of Marine Salt (chlorure of sodium) in particular. By M. Becquerel. Paris. Duod'o. pages 252.

Grease in Wines. By J. Ch. Herpin. Pamphlet, pages 40. Paris. Duod'o.

Researches on means of destroying the Alucita, (a species of moth,) an enemy of grain. Pamphlet. Duod'o. Paris. Pages 30. By Herpin, of Metz.

Instructions for the use of Proprietors of Vineyards. Paris. Pamphlet. Duodo. pages 12. By Herpin.

Means of destroying the Pyrale, (a worm) in the grape vine. Paris. Pamphlet, pages 8. By Herpin.

Agricultural considerations on the importation of foreign stock into France. Pamphlet, Octavo, pages 20. By Herpin.

A collection of memoirs relative to the uses of Salt in Agriculture. Octavo. Pages 112. Paris.

Central National Society. A Memoir on the amelioration of the Sologne, (a large unhealthy swamp on the river Loire.) By Becquerel. Octavo. Pages 24. Paris.

Experimental Researches as to the action of Salt on vegetation, and the uses of it in agriculture. By Becquerel. Octavo. Pages 35. Paris.

Memoir on the Electro-Chemical application of the Oxides of Metals, and of metals upon metals. By Becquerel. Octavo, pages 24. Paris. Pamphlet.

Experiments on the Development of Electricity by Pressure, and the laws of such development. By Becquerel. Pamphlets. Number 4. Pages 170. Duplicates of the 3d No. Paris.

Economical researches on wheat bran and others. By Herpin. Pamphlet, duodecimo, pages 36. Paris.

Central and National Society. A memoir on the European Dodder. Premium, the gold medal. Pamphlet octavo, pages 23, Paris, by Herpin.

Central and National Society. Memoirs on the destruction of the moth and wevil. Premium, the gold medal of 1850. By Herpin; octavo pamphlet, pages 12. Paris.

Notice of Malt Meter. By Herpin. Pamphlet, pages 32; octavo. Versailles.

Essay on the turning of wine (souring.) Pamphlet, octavo, pages 20. By Herpin, Paris.

New Filtering Fountain for domestic use. Herpin. Pamphlet, duod'o, pages 7. Paris.

Description of a new Alembic for the use of apothecaries and liquor dealers. By Herpin. Pamphlet, duod'o, pages 23. Paris.

Memoir on the quantities of salt (chlorure of sodium,) contained in the plants of salt earth and earth not salted, &c. By Becquerel. Pamphlet, octavo, pages 16. Paris.

The Amelioration of the Sologne. Reports presented to the general council of Loire, 1850. Becquerel and others, octavo, pages 62. Paris.

Memoir on various insects injurious to wheat, rye, barley and clover, &c. Pages 50. Six very valuable plates. Paris. by Herpin.

Electricity. By Becquerel. Pamphlet, octavo.

Extracts from the Encyclopedia of the 19th century, in 32 large octavos. Paris. By Becquerel.

Institute of France. Memoirs on Electricity. By Becquerel. Quarto, ten numbers.

Notice of a bed of lignite (a sort of wood coal,) containing amber and crystals of a substance analogous to *mellite*, (a yellow colour, called so from the honey stone.) By Becquerel. Quarto, pamphlet, pages 8.

Funeral Discourse by Becquerel, on the late Lieutenant General of Engineers, Vicomte Rogniat. Quarto, pamphlet, pages 7. Paris.

On the decomposition of the neutral salts in the bases of potash and soda, Becquerel. Quarto, pages 4. Pamphlet. Paris.

On the uses of plaster and charcoal dust for disinfection of fecal matters. Herpin. Paris. Pamphlet, pages 15. Paris.

Reports to the Society for the encouragement of national industry on bleaching linen. Herpin. Quarto, pamphlet, pages 31. Paris. Two plates of apparatus.

Notes on the varieties of form of carbonate of lime in the chalk deposits of Clamecy. By Becquerel. Quarto pamphlet, pages 8. One plate of crystals. Paris.

Report to the Royal Academy of Sciences on the memoir of Mr. J. Payer. On the tendency of the stems of plants towards light. Quarto pamphlet, pages 3.

On the disengagement of heat by friction. New researches, by Becquerel. Pamphlet, quarto, pages 18. Paris.

A. Legrand's manual of the Dahlia cultivator. 2d edition with plates.

General considerations on the electric condition of bodies by the action of heat.

Terrestrial electric currents.

On the electro-chemical circuits in liquids only.

On the precipitation of metals by other metals.

On the application of electro-chemistry to the study of the phenomena of the decomposition and re-composition of terrestrial bodies.

On the application of the Physico-Chemical sciences to the study of natural history, to the arts, and to industry.

New application of Electro-Chemistry to the decomposition of mineral substances.

Report on the treatment of ores of copper.

On the re-production of the precious metals of Mexico, considered in its relations to geology, metallurgy, and political economy.

Memoir on the colors of metals.

NOTICE OF ARTICLES AT THE 24th ANNUAL FAIR 1851.

AGRICULTURAL.

Improved Corn and Cob Cracker.

This is an improvement on Beal and Hale's patent, for cracking corn and cob together for purposes of fodder. It came in at our last exhibition too late for examination and premium. The machine, however, was put in operation, and as far as we had an opportunity of examining it, did its work satisfactorily. The importance of a machine of this kind, and the very frequent inquiries made at the Institute for one, warrants us in making a brief notice of this. We think it possesses superior merit to other machines we have seen, intended for the same use; it may be applied to other purposes, such as cracking drugs, hemlock bark for tanning, and various other substances. O. Nichols, & Co., Lowell, Mass , are the proprietors. A. C.

Churns.

The attention of many ingenious men has of late years been directed to the invention of some method by which the labor of churning might be materially lessened. The products of ingenuity, thus directed, have been numerous, and the success varied. We have witnessed the operation of several churns within the last few years, which produced butter in the space of from four to seven minutes. There seems, however, to be a very general doubt expressed, whether butter, churned in so short a space of time, possesses as much sweetness as when more time is consumed in the process of churning; and also whether it does not sooner deteriorate. These are important considerations, and a solution of them is of consequence to dairymen, as well as to the consumers of butter generally.

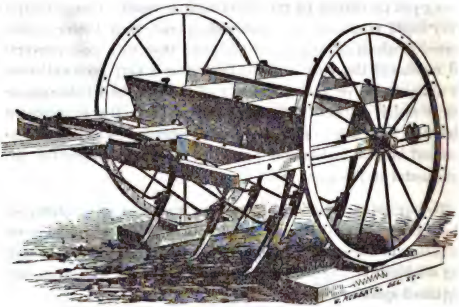
Mr. J. B. Tillinghast presented, for the first time, at our late Fair, a churn of novel construction, denominated by him 'the Premium Churn,' which possesses some good qualities. It may be constructed of wood, or Rockingham ware, which is better, of any desired capacity; on the inner side of which there are placed at intervals, angular flanges, or projections of about two inches wide, running in an angular direction from top to bottom, or nearly so. The cover of the churn is in two parts and closely adjusted to its top, on which is permanently fixed an iron frame of light construction, for sustaining the driving wheel and dasher shaft, on the top of the shaft is a bevelled multiplying wheel which is put in motion by the driving wheel. The dasher shaft passes near to the bottom of the churn, from which, cross arms, to any desired number are attached, extending horizontally so as nearly to meet the flanges on the side. The driving wheel being put in motion by the hand with a crank, communicates very rapid motion to the dasher shaft, and thus butter is produced in about six and a half minutes; then with a slow reversed motion of the dasher shaft, the butter is very soon collected in a mass. Ry removing one-half of the top, the whole apparatus is easily dismantled, and it occurred to us that it presented facilities favorable to cleansing and purification, which is all important in good butter making. This machine obtained the silver medal of the Institute.

To our mind, were we engaged in practical agriculture, we should consider Simpson's Pendulum Machine a valuable acquisition to our stock of tools. This may be applied in operating all kinds of churns, patent as well as the old dasher, in any required space of time.

We have just been informed of the result of a test, made in a neighbouring city, where nine different churns, one being the common churn, were put in operation at the same time, with milk at 62° F; Tillinghast's was not of the number; and it is reported that butter was made in each of them in about the same space of time, say six to eight minutes. A. C.

FLAX AND HEMP BREAKING AND DRESSING MACHINE.

Mr. S. O. Clemens, Springfield, Mass., exhibited at the Twenty-fourth Annual Fair a machine of novel construction for the above purposes. This machine was in operation during the fair, and performed its work much to the satisfaction of those who examined it. It is very portable, occupying a space of about 3 by 9 feet and 3 feet in height. The proprietor claims, that with the application of one horse power, it can be driven with a rapidity requiring two hands to supply the material and one to take it away as dressed. We judge, from witnessing its operation, that it subjects the material to smaller loss than other methods, and does its work with greater rapidity without injury to the fibre. It merits the attention of those interested. A. C.


W. ROBERTS. DEL SC.

GATLING'S GRAIN DRILL.

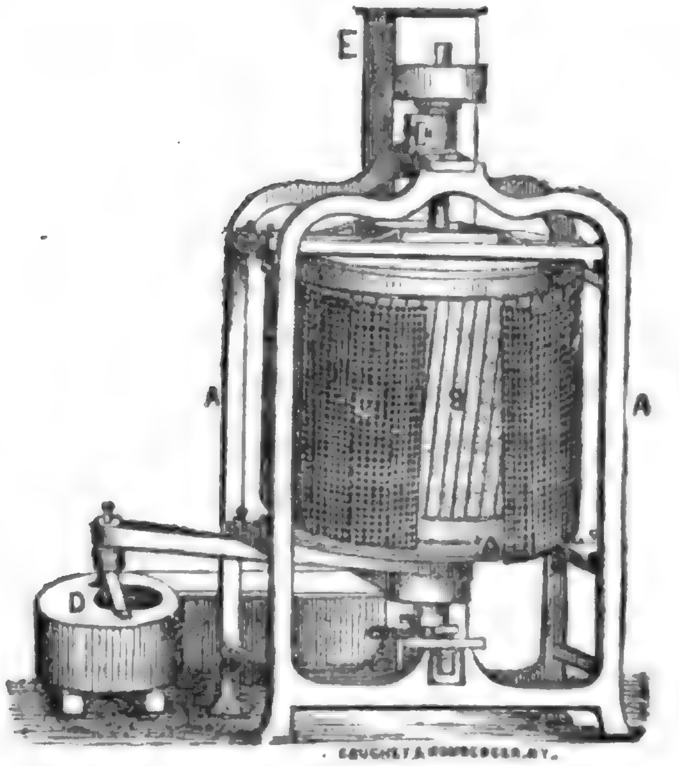
It is claimed for the machine, of which the above cut is a good representation, that it embraces economy and efficiency in accomplishing what has been aimed at by many inventors in this department of agriculture for several years past.

It consists of six seed boxes placed on a frame and secured to the axle of the wheels, upon which the machine is moved. In the bottom of each of these boxes, which are of an inverted pyramidal form, there is placed a revolving endless screw, auger shaped, which regulates the quantity of seed to be dropped, and it may be varied from half a bushel to three bushels per acre. These augers receive their motion from gearing attached to the axle, which revolves with the wheels when the machine is in full operation, but the whole is readily thrown out of gear, in which case the wheels revolve on the axle and the dropping of seed is suspended. The seed, thus delivered by the augers, passes into leather tubes extending below into six hollow coulters, through which it is deposited at the bottom of the drills The augers pass the regular quantity of seed into the coulters without injury and with precision. The construction is such that the coulters may be arranged at any required distance from each other, and being placed in two rows of three each, the rear row being opposite the spaces in the front row; thus the liability of the machine to collect stubble is avoided. The coulters are secured to the levers by means of wooden pins which break in case of coming suddenly in contact with obstacles, and the wooden pins can be replaced on the spot in a few minutes, without injury to the machine. One or all the coulters may be raised out of the ground at pleasure to avoid obstacles, or in turning at the end of the rows, and when thus suspended the planting is stopped. The machine received the gold medal of the Institute at its twenty-fourth Annual Fair. A. C.

REUBEN DANIELS' SELF SHARPENING STRAW AND STALK CUTTER.

This machine is designed for cutting straw, hay, stalks, roots and brush for fuel, into any lengths below four inches. It consists of a series of knives placed on a revolving cylinder and adjusted to a stationary knife attached to the end of the feeding box; the feed is carried forward by means of a toothed roller which lifts so as to accommodate the space to the size of the material to be pressed forward to meet the cutters on the revolving cylinder; the self sharpening process is thus managed, the knives on the cylinder are pressed forward by means of set screws so as slightly to meet the stationary knife, the edges of which being touched with oil and fine emery, the cylinder is put in operation with a reversed motion until they wear themselves sharp and easy. In large establishments where immense quantities are required it occurs to us that this machine would be very effective. A. C.

SMUT AND SCOURING MACHINE.



Messrs. F. Harris & Sons, Elizabethtown, N. J., exhibited an improved machine for this purpose, which met the unqualified approbation of the judges. The machine may be sharpened with facility as often as required, has stones for scourers, the shape and dress of which are changed so as to increase the surface on the periphery for scouring and beating the grain; the case is made of wire work instead of sheet iron, leaving greater space for throwing off the dirt. The frame is of iron instead of wood, thereby increasing its durability. It received the Gold Medal of the Institute. A. C.

WINE.

Numerous specimens were presented at the fair, made from native grapes; there does not appear to be any decided improvement over former exhibitions. We make the following extract from the judges' report:

The sparkling Catawba of N. Longworth, Esq., Cincinnati, is decidedly the best wine offered. It possesses qualities peculiar to itself, and bids fair to become a general favorite.

Three specimens of wine from Mr. Harold, Hempstead, L. I., made from the Catawba. These we considered good, and will be improved by age.

Four specimens from Mr. Isaac Merrell, Port Richmond, Staten Island. That from the Catawba we consider a good imitation of the ordinary Rhenish wine, and would be an acceptable wine in our market. The wine from the Muscadine approaches very nearly the foreign Muscat wine, and may be considered a good article.

Two specimens from Mr. W. H. Hughes, Matteawan Point, N. J. Catawba and Isabella. Good attempt at wine making. One of these specimens resembles Malaga, and would improve with age.

Three specimens from Mr. W. H. Simonton, Brooklyn, L. I., from the Isabella. Good imitation of the Mosselle, preserving well the flavor of the fruit.

Elderberry wine from Mr. Harold, and Currant wine from Mrs. E. R. Purse, are both of good quality. A. C.

MECHANICAL AND MANUFACTURING.

Blake's Artificial Slate.

This article has been four years before the public, and used for the purpose of covering roofs and the sides of buildings. In addition to its properties for these purposes, it has recently been discovered that it adheres with greater tenacity to cast iron surfaces, and iron thus coated with it may be variegated with colors so as closely resemble various kinds of marble, and will bear a polish equal to that material.

The proprietors are about introducing it for mantle pieces, table tops, columns, &c. Specimens were exhibited at our last fair, in imitation of Verd Antique, its appearance was good.

A. C.

Carriages, Sleighs, &c.

In this department of mechanism, our exhibition was much improved this year. The managers deeply regret that the limited space in Castle Garden, is so inadequate to an extended display, which undoubtedly would be presented did our space admit of it. It will be their endeavor on future occasions to provide greater accommodations.

The coach exhibited by Williams & Dingee, 14 Amity Place, attracted very great attention, and deservedly so, as it was a highly finished and beautiful piece of workmanship. Our judges pronounced it a very superior article.

A shifting top wagon, with carved panels, from John H. Wood; Mainard & Stephens, Agents, 368 Broadway. An excellent article, good in model and finish.

An omnibus carriage, from R. J. Jimmerson, corner of Avenue C. and 10th street, was commented upon by thousands. It appeared, in all respects, to be constructed in the most substantial manner, and the painting and finish were exquisitely done. The judges pronounced it a very fine and superior article.

A one horse sleigh, from John G. Ostrom, Rhinebeck, N. Y.; Wood, Tomlinson & Co., Agents. An excellent production, fine in all respects.

Coach mail axles, from W. H. Saunders, very fine. One bundle of carriage wood bows, from Saunier & Crane, 16 Amity Place, very fine. Patent hub fastening, from Galpin & Foster, Greenport, L. I., a new article. Billing's patent band wrench, Smith, Van Horn & Co., Agents. This also is a new article. A. C.

COTTON GOODS.

We cannot present to the public a better view of this department of the exhibition than is to be found in the report of our judges, which we copy almost entire, and for which, we beg leave to assure them that the managers feel under obligations.

The committee report, that the exhibition of cotton goods for 1851, although respectable, affords nevertheless but a feeble representation of the extensive variety of fabrics produced from this great staple in the manufacturing districts of our country, many of which, although not exhibited, might justly be regarded with pride by all who feel an interest in the prosperity and success of American manufactures.

From the specimens presented, your committee are enabled to report a steady progress in the arts of weaving, dyeing, printing, and finishing, which affords an encouraging prospect of a degree of ultimate perfection which will one day place our domestic fabrics in the front rank in competition with the world.

Having carefully examined the articles submitted to our inspection, we have decided as follows:

The brown sheetings, from the Williamsville Co., Providence, R. I., are the best exhibited, of good cotton, fine texture, beautifully made, and not easy to excel.

The bleached sheetings from the Wamsutta mills, New Bedford, Mass , are a vast improvement on former exhibitions from the same source, and from their exceeding fineness and pure bleaching deserve high commendations, and are, in the former respect, unrivalled by any other specimen presented. They compare favorably with the choicest styles of British and French shirtings ever seen in our market. It was insinuated that these goods were made from imported yarn expressly for exhibition. But we learn from the most reliable source that they are made from yarn of their own spinning, and that the same quality of goods from the Wamsutta Co., are now sold in the market to a considerable extent.

Bleached Shirtings from the New-York Mills. These goods maintain their standard excellence, and although not as fine as the specimens from the Wamsutta Mills, are made with uniform perfection, and from their superior weight and firmness, are justly distinguished for their durable qualities.

Bleached Shirtings from the Lonsdale Co., Providence, R. I., are very fine and handsome.

Bleached Shirtings from the Utica Steam Mills; from their extraordinary weight and firmness, present important advantages to the consumer.

Bleached Jeans from the New-York Mills, are without doubt the best goods of this description made in the United States, and perhaps cannot be improved.

Cottonades from the Ida Manufacturing Co., are the only style exhibited. These goods have such decided merit, as to entitle them to particular favor. The colors are permanent, the texture is firm and strong, and not disguised with artificial appliances to deceive the eye or the touch.

Ginghams from the Ida Manufacturing Company, are bright, handsome colors, and good honest fabrics—highly creditable.

Ticking from D. Lammot & Son, Philadelphia, is the only specimen exhibited. It is in all respects very superior.

Printing Cloth from J. C. Dodge & Son, Dodgeville, Mass. Nothing remarkable in the fabric excepting an *uncommonly perfect selvage*, (said to be the result of some recent improvement in the loom for weaving,) a matter of no little importance in producing a perfect print.

Madder Prints from the mills of A. W. Sprague, Providence, R. I., afford the best specimens of printed calicoes exhibited. Some of these are on fine wide cloths, colors well combined and developed, and executed with great perfection. A few more strides in the art of preparing and applying colors, and originating designs, will remove all temptation to introduce foreign calicoes to our markets. It is therefore desirable to stimulate emulation in the production of an article of such universal consumption.

The *Printed Calicoes* from the American Print Works, Fall River, Mass., are handsome designs, the colors tastefully combined, and printing very well executed.

The *Linen Diapers* and *Crash*, from H. H. Stevens, Webster, Mass, were the best specimens on exhibition.

The case of *Linen Diapers* and *Cotton Diapers*, from D. G. Scott, Paterson, N. J., presents several excellent specimens. The manufacturing of these descriptions of goods having been but recently commenced in the United States, every successful effort in their production deserves commendation and encouragement.

Mrs. H. Weir, of Pittstown, N. Y., exhibited a variety of goods, the result of female industry, among which were samples of plain, twilled, and diaper brown linen, of excellent and rare fabric, all highly commendable.

TABLE AND POCKET CUTLERY.

It is extremely gratifying to note the advances which are annually made by our artisans and manufacturers in this department; the time cannot be distant when their success will be complete. Even now, in some important articles foreign competition has been set at defiance. Thanks alone to the indomitable energy and perseverance of our people, which halts not, as long as there is the slightest ray of hope pointing in their countless paths to ultimate success. The display at our last fair was animating.

There was a case of fine pocket cutlery from the Waterville Manufacturing Co., Waterbury, Conn., on which the judges thus report, "*we say with confidence that they rank with the best makers of Sheffield.*" This company has now in employment two hundred men, of whom one-half are Americans. They make up this year in value $150,000 of pocket cutlery; the blades, and all other parts of the work, are made in their own factory. The proprietors of this establishment have been engaged for nine years in accomplishing its present condition; during which they have labored under extreme difficulties, in competing with the accumulated skill and experience of the foreign manufacturers, as well as the low price of labor in Europe. Nevertheless they have succeeded in establishing a reputation for superiority, and we sincerely hope they will soon defy foreign productions. We have reason to believe their cutlery is preferred wherever it is used, and they certainly have the strongest claims to the patronage of their countrymen.

One case of table knives and forks, and a variety of knives for other purposes, from Lamson, Goodnow & Co., No. 7 Gold-street, New-York, was on exhibition, on which the judges thus report; "*these specimens are not excelled by the table cutlery from any country, either in fashion, taste, or quality.*" Lamson, Goodnow & Co., of Shelburne Falls, Mass., in 1845 commenced the manufacture of butcher knives with six workmen, and since that time have been increasing gradually, adding various styles of cutlery, until the present time. They are now operating successfully with an increased number of workmen in the manufacture of cook, butcher, shoe knives, and table cutlery, embracing a number of grades, from the common to the first quality sold in the United States. Their workmen, with few exceptions, are Americans. They manufacture their own forks, and all their knife blades are made from solid cast steel, and not welded to iron, as is the case with the foreign article. They manufacture and finish all their goods in their own shops, and claim for them the honor of being entirely of American manufacture. It is not long since it was deemed impracticable to establish the manufacture of these articles in the United States, with any probability of being able to compete with the foreign articles. Yet the perseverance of this house, in less than six years, has overcome all difficulties, their work is preferred whenever it is used, fast growing in public favor, and like the axes, hatchets, scythes, chisels, tailor's shears, and other articles of American hardware, will soon be beyond foreign competition.

Pratt, Ropes, Webb & Co., Meriden, Conn., also exhibited a case of very superior Table Cutlery.

A case of Tailors' Shears, from the well-known manufacturer, Roscius Heinish, Newark, N. J., Agency at 91 Nassau-st, N. Y. The reputation of this manufacturer is too well known to require comment at this time. The shears of Mr. Heinish have been used by tailors in London for several years; they have long since driven the foreign article out of our market.

A case of *Tailors' Shears* was also exhibited by Leonard & Windt, 29 and 31 Gold-st., New-York, bearing a close resemblance to those of Heinish, and are deemed an excellent article.

We copy from the report of our judges the following remarks, which, from the known capacity and intelligence of those gentlemen, should have their influence with the public:

"The fine Table Cutlery of this country is quite equal, and believed to be superior to that made in England. Our finest blades are entirely of cast steel, and beautifully ground.

A. C.

DOOR SPRING.

Mr. R. W. Inman, of Brooklyn, Long Island, exhibited a door spring which has been patented by him. It consists of a small steel rod and three brackets, working perpendicularly on a twist in the rod. It may be attached to any door so as scarcely to be perceived, not likely to get out of order, and works most effectually. It has neatness, simplicity and cheapness, in a very eminent degree to recommend it, and where such appliances are required, it merits general favor. A. C.

EDGE TOOLS, &c.

The display of edge tools at our last Fair was very extensive, and distinguished for varied improvements, surpassing in many respects the imported articles in quality and cheapness.

The display from Mr. D. R. Barton, Rochester, N. Y., as a whole, was the best ever exhibited at our fairs. It consisted of Carpenters' and Joiners' tools, Coopers' tools, cleavers, improved hay knives, fiirmer chisels and gouges. The latter articles have only lately been brought into successful competition with the foreign articles; they were deemed to be very superior in quality and finish, and the whole fully sustained the reputation they have obtained. All the goods from this establishment are warranted; giving employment to one hundred hands, who turn out annually, in value, $130,000.

Brass Kettles from the Waterloo Co., Waterbury, Conn. These are manufactured by a new process, having the bottoms stronger and more durable than any heretofore made. The improvement in American kettles, and their cheaper cost of production, has, within a short period, stopped the importation of English and Dutch battery kettles.

Case of Files from John Russell, 22 Cliff-st., N. Y. Mr. Russell now employs over one hundred hands at Sing Sing, (outside the prison,) in the manufacture of files. They are deemed by our judges equal to the best imported, and are sold at less price. The business promises to become an important branch of American industry; one that, despite the embarrassment arising from the fluctuating policy of our government in regard to protection, has forced its way up, and now bids defiance to foreign competition.

R. Hoe & Co. made a very beautiful display of *Saws* of their manufacture. It embraced almost every variety. The reputation of Messrs. Hoe & Co. for superiority in this deparment is too well known to require particular comment.

Tinned Iron Wire from T. B. & S. S. Clark, Sheridan, Con. This wire is covered with tin by a new process without drawing the wire. Part of it was annealed, the tinning of which has, we are told, not been done before without destroying the annealing properties. It was all well manufactured, and must successfully compete with the imported article.

Enamelled stair rods, from A. K. Pattison, 407 and 409 Cherry street, New-York, were very beautifully ornamented and well manufactured. We should suppose that these articles would go into extensive use. They are certainly preferable to brass, or any other stair rod with which we are acquainted, being equally strong, and superior in point of cleanliness and beauty. A. C.

EMBROIDERY AND NEEDLE WORK.

We feel called upon to tender the sincere thanks of the Board of Managers to the Ladies who composed the committee of judges on these articles. The list committed to their care and examination was very full, and the well considered and detailed report returned by them, we are happy to say, has given entire satisfaction. We copy from their report the following remarks in relation to Cloaks and Mantillas:

"They are, in the opinion of the judges, superior to anything of the kind ever exhibited in this country, and equal in every respect to those imported from France. As they form a very important part of the dress of the ladies of the present day, and large sums are annually expended in importing them from France, the "ladies judges" wish to encourage their manufacture at home. They therefore particularly request the Premium Committee to award, in this instance, a gold medal. The embroidery is perfect and worthy the award."

The exhibitors of Cloaks and Mantillas, were George Brodie, 51 Canal-street; Molyneaux Bell, 58 Canal-street, and Beekman & Co., 66 Canal-street. To Mr. Brodie the gold medal was awarded; to Mr. Bell the silver medal; to Messrs. Beekman & Co., a diploma. The white satin opera cloak from Mr. Bell was much admired and reflected great credit on his exertions. A. C.

EQUATORIAL TELESCOPE.

Mr. Henry Fitz, of this city, exhibited at the last fair the third complete Equatorial instrument of his manufacture. We allude to this with pride, for it appears to us that this self-taught American artist bids fair to render our country independent, in this important article of the products of European manufactures, not excepting the successors of the world renowned Frauenhoffer.

The object glass of the Telescope under consideration, has eight and a quarter inches aperture, with a focal length of eleven feet.

It is furnished with Huygen's eye pieces magnifying from 60 to 2,000 times, and an annular micrometer for measuring comets and faint objects which do not admit of illumination. It has a filar micrometer furnished with a set of Ramsden's, or position eye pieces, magnifying from 100 to 2,000 times, and also a clock for moving the instrument corresponding with solar, lunar, and sidereal time, by which the object is kept accurately within the field of view. The hour, or right ascension circle, measures eleven inches in diameter, divided by half degrees and reading to minutes. The declination circle is thirteen inches in diameter, divided to half degrees and reading to minutes. There is also a comet seeker of three inches aperture attached to the tube as a finder. All the glasses are made from Guinand's disks.

This instrument is the largest which has been made in the United States, and in all respects accurately and most beautifully finished. The base is made of ash in the form of the Munich instrument, and veneered with rose wood. It was made, we understand, for Wm. Van Derzee, Esq., of Buffalo, for private use, at a cost of $2,200.

In our volume for 1849, we noticed an object glass 6¼ inches aperture, made by Mr. Fitz for the United States government, to be used by the astronomical expedition. We are now permitted to make the following extract from a letter written to Mr. Fitz by James M. Gilliss, Esq., in charge of said expedition, dated at Santiago de Chile, February 1st, 1851.

"There is no doubt whatever, that the object glass made by you has shown me more minutely and satisfactorily difficult stars than that at Washington ever did; yet it is proper to say at the same time, no systematic trial has ever been made by me of the capacity of either glass. With your lens six of the satellites of Saturn have been seen and the sixth star in the trapezium of Orion without difficulty. There are occasions when the instrument would readily bear a power of 800 or 1,000, and its constant use would be amply repaid; but the numerical force of the expedition in assistants does not permit its employment except for the series on Mars and Venus, and occasional occultations."

A. C.

FIRE ARMS.

In this department of mechanism, the contributions at our last Fair were more numerous than usual; the display of ingenuity and workmanship was extremely interesting, and the competition spirited. We are much obliged to our judges for the time and attention bestowed by them in their examinations.

The construction and improvement of fire arms has undoubtedly attracted the attention of ingenious men from the period of the invention of gun powder to the present time. The earliest form of the musket, which was fired with a lighted match, and must have been exceedingly clumsy, after a period of more than three hundred years, has succeeded to the light and elegantly finished musket, with the percussion lock of the present day, through a series of improvements which have been from time to time adopted. During this period the rifle has been introduced, claiming advantages over the musket for greater accuracy and range; but not suited for the general purposes of infantry on account of its greater weight and want of celerity in loading. This led to the invention of the revolving breech, in which there are six charges which may be fired in the most rapid succession, and is probably the greatest improvement thus far obtained. However, after the six charges are fired, considerable time is consumed in replacing them, and this might prove variously disadvantageous. This leads to a desire for some method by which the great celerity for six discharges, obtained by the revolver, may be made continuous. So that of late we have had presented to us a variety of inventions by which the arm may receive its charges in rapid succession at the breech.

In regard to these improvements, however feasible and perfect they may appear upon slight examination and trial, it would be exceedingly improper to adopt them, for military purposes particularly, but upon the most careful experiments and use in the hands of the soldier a sufficient length of time fully to test their qualities. Of the arms exhibited we shall notice two specimens.

The case of revolving pistols exhibited by Samuel Colt, Hartford, Connecticut, was deemed to be decidedly superior, and unsurpassed in workmanship. This arm is too well known to require at this time a particular description.

Sharp's Patent Breech Loading Gun.

ORDNANCE DEPARTMENT,
Washington, December 17, 1850.

HON. C. M. CONRAD, *Secretary of War:*

Sir—When the Board of Ordnance Officers was convened to examine and try repeating pistols under the resolution of the Senate of the 30th of September last, there were various arms, other than those specially mentioned in the resolution, which had been presented to the notice of the War Department by their inventors, who claimed for them many advantages over those in use. The meeting of the Board presented a good opportunity to make trial of such arms: they were accordingly directed to do so, and to report the result of their examinations and experiments. I respectfully enclose a copy of that report from which it will be seen that but one of the arms tried, viz: Sharp's with Maynard's primer, is considered suitable for public service.

My opinion of Sharp's gun, formed from an examination of its construction, is favorable to its superiority over all other breech-loading arms which have come to my notice, especially when combined with Maynard's improvement for priming, and I think it may prove a valuable arm for the military service. But the only sure way to establish or refute this opinion is practical trial of the arms, in the hands of troops in active service in the field. I therefore recommend that the purchase of a small number of these arms, say two hundred, be authorized, and that they be issued to the troops on the Western frontier; after they shall have been in use by them, for a sufficient length of time, to test their practical utility, an arrangement may be made for introducing them regularly into the military service to such an extent as experience may render advisable. * * * * *

Respectfully your obedient servant,
(Signed) G. TALCOTT,
Brevet Brigadier Gen'l, Col. of Ordnance.

REPORT

Of Board of Ordnance Officers on Patent Small Arms other than Repeating Pistols.

WASHINGTON, D. C., *November* 27, 1850.

In addition to their report on the trial and examination of repeating pistols, the Board have agreeably to their instructions, to report the result of their examination of the following arms, being all that were presented for that purpose:

1st. Sharp's Rifle and Musket.
2d. Klein's Prussian Rifle.
3d. Jenks' Carbine.
4th. Jennings' Rifles.
5th. Perry's Rifle.
6th. Welch's Rifle.

1*st.* *Sharps' Rifle and Musket.*

This is an arm loading at the breech, which is opened and closed by a vertical slide or shear cutting off the end of the cartridge. This arm has withstood all the trials the Board has considered necessary to make with it. It was fired several hundred times without cleaning, during which the movements of its machinery was not obstructed. The arm is loaded with great ease and rapidity by using a simply prepared cartridge which Mr. Sharp has arranged; and also the ordinary rifle and musket ammunition with its percussion caps can be used with facility.

The penetration, range and accuracy of fire from the rifle thus arranged, with a cartridge and conical ball prepared for it, were superior to that of any other breech loading piece offered to the board. With Maynard's primer (which, as well as the cap, may be used) this arm was fired ten times per minute, and when discharged over the water, a second charge was fired before the *ricochet* of the first had ceased.

From their observations of the use of this rifle, the Board are of opinion that it is superior to any of the other arms loading at the breech, and think it would be well to have further trials made, and to put some of them in the hands of troops to determine whether they are suitable to the military service.

2*d.* *Klein's Rifle.*

This is a Prussian rifle, understood to be at present under trial in the Prussian service. It is loaded at the breech, and the charge is fired by means of a needle which pierces the friction priming attached to the cartridge, and although by its peculiar construction, and that of its cartridge and priming, it may be fired with rapidity, these peculiarities the Board believe render the arm objectionable, and its ammunition, from its combining the charge and priming, is considered unsafe. Under the most favorable circumstances, the Board consider this rifle not as well adapted to the service of troops as Sharp's.

3d. Jennings' Rifles.

One, a repeating rifle with a tube parallel to the barrel for carrying twenty-four cartridges; the other similar to it, but without the tube.

These arms are loaded at the breech with an elongated ball, in the cylindrical part of which the charge of powder is contained; they prime themselves from a magazine of percussion pills.

The Board object entirely to the use of a magazine of percussion priming pills, as is used with these arms, and they do not think it safe or useful to carry a number of cartridges, attached to a gun. From the peculiar arrangement of the ammunition, the charge is not sufficient to give the necessary force. The arms exhibited to the Board were not considered by the Inventor as perfect, and the trials were not made with a view to establish their durability, but the Board are of opinion that the principle of construction of these arms, is not such as would be suitable for the military service.

4th. Jenks' Carbine.

The carbine now offered by Mr. Jenks, is slightly altered from those that have already been tried in service. The Board are of opinion that the objections, which have been found against these arms, have not been removed by his recent modification.

5th. Perry's Rifle.

Its construction is similar to the pistols briefly described in the report on that subject. The inventor had not completed the arrangement for using a cap instead of the percussion pills, to which the Board object. Only limited trials were made with the arm in its incomplete state. The principle of its construction, however, the Board do not consider suitable to the service.

6th. Welch's Rifle.

An arm of rough construction, merely shown to the board, to illustrate his method of loading at the breech and firing with a magazine of percussion pills.

The principle and arrangement of the mechanism do not, in the opinion of the Board, render it suitable for the service, and their objection to a magazine of percussion pills has already been stated. All of which is respectfully submitted,

(Signed) R. L. BAKER,
Major and B't L't Col., Pres't of Board.
A. MORDECAI,
Captain of Ordnance and Brevet Major.
BENJAMIN HUGER,
Captain and Brevet Colonel.
W. A. THORNTON,
Captain of Ordnance and Brevet Major.
G. H. TALCOTT,
Capt'n of Ordnance and B't L't Colonel.

J. L. RENO,
Second L't and B't Captain, Recorder of Board.

MAYNARD'S SELF PRIMING LOCK AND PRIMING.

This method of priming is intended as a substitute for the percussion cap. It consists in a coil of substance resembling thick paper, rather more than one-eighth of an inch in width, in which, at proper intervals, spots of detonating powder are placed. The whole apparatus is contained in a small chamber in the lock, and the primer for each discharge is carried forward to its proper position on the top of the cone each time the gun is cocked. The advantages claimed for this lock and priming are various and important, some of which we will state. It may be applied to old arms by substituting new locks or by altering the old ones. By the motion of the hammer from half cock to cock, the gun is primed with mathematical accuracy, the state of the weather, temperature, or position of the gun, having no influence. When the hammer is down, or at half-cock, the gun is not primed, and consequently cannot be fired by accident or carelesness. All the manipulations required for other methods of priming, (among which cold fingers and caps are particularly annoying,) are here dispensed with. The hammer is carried resting upon the cone with perfect safety, and the celerity of firing is greatly increased. No pieces of metal are thrown off, or other annoyances, which result from the use of the percussion cap. The charges are separated from each other by incombustible matter, so that no explosion of several can result from firing one. The lock for using this priming may be adapted to any kind of military or sporting guns, or to cannon.

Such are the claims of this newly invented lock and method of priming. From the examinations we have had, together with the report of our judges, we feel safe in endorsing them as valid. It received the gold medal of the Institute. C.

HAT, MADE OF PINE LEAVES.

Miss J. H. Hudson, of Franklinville, Long Island, presented at the last Fair a Hat made of the long leaves of our Southern Pine. This is to us the first intimation of any practical purpose to which this product, so abundant at the south, may be applied. There are some thousands of the females of our country who find partial employment in manufacturing hats from the palm leaf. The leaves of the pine may be wrought into hats of a better quality, as to appearance and durability, and they may be bleached, we are told, to any degree of whiteness. Put together after the fashion of the Leghorn hat, we cannot conceive a more acceptable covering for the head, for summer wear, than these leaves are capable of thus producing. This we hope may constitute another branch of domestic industry, both in fabric and material. A. C.

MACHINERY AT THE LATE FAIR.

The Board of Managers feel impelled to return their most sincere thanks to the gentlemen who served on the various committees, as judges at the late Fair. Impartial decisions from competent men, are of the very highest importance in promoting the objects of the Institute. To obtain such, the Managers have been unremitting in their efforts. In our brief notices of the most prominent and new articles on exhibition, we shall avail ourselves of the opinion expressed by our Judges generally, with such remarks as our own personal examinations may have suggested.

From the Lowell machine shop, Lowell, Mass.—An engine lathe, slotting machine, planing and drilling machines. An excellent display of tools. The planing machine is new for many kinds of work, and the whole reflects much credit on the manufacturers.

From E. & S. D. Gould, Heddenburgh Works, Newark, N. J. A compound planing machine; wheel tooth cutting machine, and vertical drill. These tools as a whole are made well and creditable to the manufacturers. The machine for planing, for some some kinds of work, can be made very useful.

From Scranton & Parshley, New Haven, Conn., nine lathes; drill press, &c. These tools are all of the common kind, of good quality, and offered cheap. Persons wanting small tools of the kind would do well to examine them.

From M. Sault & Co., New Haven, Conn. An engine lathe with an improved method of attaching the slide rest to the shears, whereby the whole height from the centre to the shears, can be used for the work to be turned. It is an ingenious arrangement, and merits attention.

From E. & T. Fairbanks, & Co., St. Johnsbury, Vt. Thirteen scales, including those for railroad tracks, depot warehouses, counters, and platform. The exhibition sustained the well-established reputation of the manufacturers, and are entitled to high commendation.

From S. G. McDougal, 238 Pearl st. Platform Scale; this is an improvement, as it does away with the weight generally used on the lever by an ingenious arrangement of two levers. For light weights it is deemed to be preferable.

From Isaacs & Darling, 101 Wall st. Self clearing anchor. Deemed by the judges a good article, less liable to get foul as the vessel swings round.

From Augustus Williams, Stillman Allen, & Co., Novelty works, agents. An alarm water guage. Valuable as affording additional security against the explosion of steam boilers. The judges are of opinion, however, that the guage cocks should in all cases be an appendage to a boiler.

Patent Governor Valve.

Junius Judson, Rochester, N. Y. This is a good and efficient arrangement for controling the quantity of steam upon the steam cylinder when the power is thrown off, or on thus rendering the motion more uniform.

Fire Proof Iron Safes.

Those exhibited by Silas E. Herring, from No. 135 Water st., were deemed the best by our judges, who observe that many from the same manufactory have proved themselves most valuable.

Iron Burglar Safes.

From the World's Safe Co., Troy, N. Y. These are made of chill'd cast iron 1½ to 2 inches thick, making it almost impossible for a burglar to enter it by the sides. The greatest objection to it is its great weight. It is worthy of a trial, and may turn out an important improvement. The inventor deserves credit.

Bulkley's Electro Magnetic Enunciator

This is a very beautiful thing in theory, and although the committee are not fully satisfied as to its practical value, they consider it a very ingenious device for getting rid of the trouble and cumbrous arrangements attending the ordinary Bell Hanging fixtures, and the effort, whether successful or not, deserves commendation.

Steam Pressure Guages.

Joshua Lowe's, J. S. Pirsson, agent. A well made article, and an improvement upon those in former use, especially for locomotives, to which we should consider them a very good and useful appendage. Show at all times the exact pressure much more nearly than can be known by the spring balance attached to the safety valve.

Self-centering and self-releasing Lathe.

Thomas W. Bailey, Lockport, N. J. This lathe possesses valuable features which may well claim attention, and which are adopted to make it useful in turning wood of irregular forms.

Chill Irons or Moulds.

Ezra Ripley, Troy, N. Y. Intended for casting Rasps, Mill plates for grinding corn, coffee, &c. A very useful invention.

Water Metre and Water Wheel.

Samuel Huse, Boston Mass. A good article and well made, exhibiting in the inventor a good share of knowledge and skill, our judges tested its correctness.

Ice Cream Freezer.

S. C. Seaman, Philadelphia. Our judges pronounced this the best machine for the purpose they had ever seen.

Iron Planing Machine.

Aldrich Tyng, & Co., Lowell, Mass. This machine has a heavy cast iron bed 14 feet long, and will plain 11 feet long, and 3 feet wide. The cross beam is raised with two screws geared together by a cross shaft on the top of the posts. The table is moved by a rack and gear, the movement strong with quick return motion of the table. It has both horizontal and vertical feed motion arranged so as to vary at pleasure and both put in motion together will plain any desired angle. The weight of this lathe is 12,500 lbs. It came in too late for competition, consequently our judges did not express an opinion upon it. The machine to our view appeared an admirable piece of Mechanism. A. C.

COMPOUND CAPSTAN AND VERTICAL WINDLASS, INVENTED BY CHARLES PERLEY.

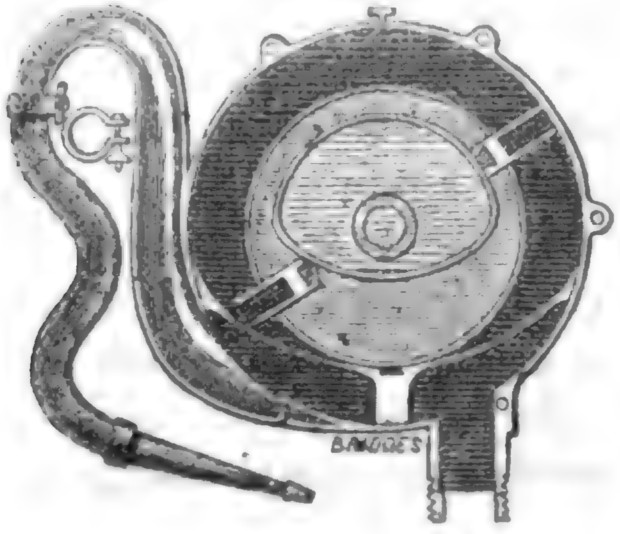
The base of this windlass is formed by a short metal cylinder, having a wide foot flanch fitted to receive bolts by which the capstan may be secured to the deck in almost any position in the ship; the upper face of this cylinder is fitted as an annular rachet bed.

Within the base, and cast with it, are arms that connect the exterior with a strong hub, in the centre of which the main spindle is secured. Between the arms, within the cylinder, are two or more levelled pinion wheels, each mounted on the inner end of a short shaft that goes through the base, and receives on the outer end a metal disk, the rim of which is formed as a female ratchet wheel, each keyed on, and rotating with their own shaft; over each there is a metal plate, fitted inside, with a pair of pauls, that take the inner ratchet teeth in *opposite* directions. On the outside each of these plates is cast with a socket to receive the end of a handspike or capstan bar, and each plate is secured by a pin through the outer end of the shaft on which it rotates.

The barrel or body of the capstan is made as a hollow cylinder, the section of which approaches the form of two parabolic curves, the largest curve forming the base of the cylinder, the smallest the top. Within the base, an inverted bevelled spur wheel is so secured that the teeth gear into the pinions beneath, and the hub of this wheel is fitted to rotate on the main spindle; and the upper part of the barrel is fitted with a flanch or arms, bored to fit the upper end of the spindle, and a key or pin through the spindle keeps the barrel secure from lifting while in work; and around the base of the barrel are pauls on pins; the moving ends of these take the ratchet teeth around the top of the fixed base, and these teeth are made with each side at an angle of about 45°, so that whichever way the capstan is rotated, the paul ends, turned in the opposite direction, hold every inch that is gained in heaving round.

On the top of the barrel, an ordinary capstan drum-head completes the machine, and is fitted with holes to receive the like capstan bars that are used with the sockets beneath. When used with the bars in the drum-head, the barrel carries the gear wheels with it, but the slight friction of these parts is not found to interfere with the work; the gearing sockets do not come in the way, and the machine is merely an ordinary capstan convenient for light work.

But on placing the handspikes into the lower sockets and setting the pauls the right way, the barrel can be rotated in either direction, and the machine becomes at once a powerful vertical windlass. The pauls on the inside of the socket plates, taking the ratchet teeth on the pinion shafts, force these, with the pinions, the main wheel and the barrel, round with a multiplied leverage, by which four men, standing in a small space round the capstan, can raise more weight, without moving a foot themselves, *than four or five* times their number can move, by what is nautically termed *walking round* the capstan, that is, travelling round pushing the bars in the drum-head before them. The form of the barrel will, in most cases, compel the rope to "fleet" itself, that is, *work upward*, as it winds on, maintaining nearly an equal leverage in work, and if it should by accident do this suddenly, or as the seamen say, *surge* upwards, the men cannot be thrown down by the foreshooting and recoil of the bars they are working with, so that they work with an increased confidence, that greatly facilitates their labor; and all this is done without carrying the spindle through the deck, as has been the common practice.



A. W. CARY'S ROTARY PUMP.

This machine, for the purpose of raising and forcing water, has been before the public since 1848. It was exhibited at our last fair for the first time, and after an examination of its construction, with the opportunity afforded of witnessing its operation, we think it fully justifies all that we have heard in its favor. One of the principal merits of the machine is the simplicity of the method of packing so as to keep the chambers perfectly tight, and at the same time friction, to a large extent, is avoided. It is easily repacked when required, and we do not perceive in it the usual liabilites to get out of order. Viewed as an ordinary pump for raising water, we consider it superior to any heretofore in use; for ships' purposes, we believe it would be found extremely valuable; for extinguishing fires it may be used to great advantage, and it may be esteemed as an important appendage in factories, stores, public buildings, gardens, &c.

These pumps may be obtained at prices varying from $35 to $1,400, depending on size and materials. Those costing the lowest sum will raise 30 gallons per minute at 120 revolutions. The Institute awarded to the inventor its gold medal in 1851.

ICE MARKER AND CUTTER.

Ice has now become an almost indispensable article in our domestic economy, consequently every invention which facilitates the acquisition of it, is of interest.

Messrs. J. & D. Ascough & Co., exhibited at our late fair two instruments which are used with great effect in procuring ice during the period when it is laid up for use through the warm season when it is most required, or for transhipment. These instruments are denominated as a Marker and Cutter, and are constructed thus: the frame work, which is made of wood, resembles the beam and handles of an ordinary plough, with the handles permanently attached to the beam. On the under side of the beam, extending the greater part of its length there are fixed a series of cutters made of steel and placed in succession, gradually extending deeper from the front to the rear of the beam, the longest being about 4 inches; this instrument is used as a marker, cuts about two inches deep, and with the services of one horse and a man will mark off from 1000 to 1,500 tons of ice in 10 hours. The cutter is similarly formed, except that the cutting instruments are made to cut much deeper, say from 8 to 12 inches. This also is operated by one horse and a man, and follows in the small furrow made by the marker, and will cut from 500 to 750 tons in 10 hours; thus it requires two cutters to complete the work of one marker, and together they will accomplish the work of 75 men with saws, which has been the usual mode of cutting ice in use heretofore. A. C.

SELF-STRIPPING CARDING MACHINE.

In the operation of cotton carding, that part of the process called stripping, has heretofore been done by hand. Under this mode various accidental delays are constantly occurring, and often serious damage by carelessness and otherwise; besides the necessity of employing hands to perform the operation. It is computed that the labor of one man is required for every 12 carding machines, and 12 carding machines to every 1000 spindles. The machine under consideration proposes to perform the whole operation of carding and stripping. It is, we understand, the invention of Messrs. Charles D. Wilcox, (deceased) and J. P. Stillman, and A. Stillman, all residents of Westerly, Washington county, R. I. The machine was exhibited in operation at our last fair where it attracted much attention, and received the gold medal of the Institute. We find in the *Scientific American* of December 6, a very accurate description of it, which we copy.

A. C.

Fig. 1.

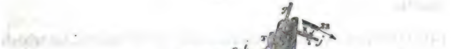
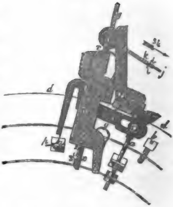


Figure 1 is an elevation of one end of a carding machine, with the improvements attached. Figure 2 is a side view of the stripper. Fig. 3 is a plan view of the machinery which operates the stripper. Figures 4 and 5 are small parts of the machine, which will be explained hereafter. Similar letters refer to like parts. As there are a great number of peculiar movements in this machine, it will require a long description to give a definite idea of its peculiarities, and at the same time it will demand the closest attention on the part of our readers.

Fig. 2.



A self-stripping carding machine has been a desideratum; those in common use are stripped by hand. The carding machine represented does not differ materially from other carding machines except in the mode of attaching the top cards. A A is the framing; B is the main cylinder; D are the arches which support the cards.

This invention relates to certain mechanical means, by which the top flat cards of a single carding machine, or of any number of carding machines, may be stripped, one after the other, in regular succession, while the machine or machines are in operation, without detaching them from the said machine or machines, and without requiring any manual aid; the operation of stripping proceeding during the whole time the carding machines are in operation.

E E are the top cards which are of precisely the same construction as those in common use, but are attached in a different manner, being hinged or jointed by pivots, *c c*, at each end of their front side to the standards, *a a*, which carry them; resting, when in position for operating, upon screws, *b b*, screwed in the arches, but being capable of swinging upwards and forwards, or turning over, so as to lay on the next card in front of it, and present its teeth upwards, (fig. 1,) where one of the top cards is in the act of turning over, and fig. 2, where one is represented turned over, the position of the tops or backs of the other top cards being represented on the latter figure by the line, *d d*.

Hanging on each of the pivots, *c c*, of the hinges at the end of the cards, is a small tumbler, G, which is divided into two parts, the outer part being visible in figures 1 and 2, and the inner part in figures 4 and 5. The outer part is of nearly elliptical form, and the inner part of nearly the same form, but has a portion of its periphery (indicated by *e* in fig. 4) concentric to the pivot, *c*, upon which it hangs, and has angular projections, *i i′* at each end of the said portion, *e*, (see figs. 4 and 5.) The tumbler turns freely upon the pivot, but on being turned a certain distance in either direction, one of the angular projections will come in contact with either the upper or under side of a part of the plate, *f*, of the hinge, which fits close up to the part *e*, and by means of these projections, the top card, to which the tumbler is attached, is turned over to present its teeth upwards for stripping, and returned to its working position.

It is presumed that the construction of the carding machine is now intelligible, and the description of the means by which the top cards are stripped, the means by which the tumblers are operated upon for turning over the cards, and the means by which the stripping apparatus is operated, will now be described.

The stripping is performed by a comb or flat card, F, which is of the same length as, and suspended above the top cards, its teeth being on its under side, inclining downwards in the same direction as those of the top cards incline upwards, when turned up. This comb is secured firmly by screwed rods, *g g*, to a bar, H, which extends across the top of the carding machine, between two sweeps or swinging arms, one on each side, I I, which are hung so as to turn freely on the ends of the shaft, 29, of the main cylinder. The screwed rods admit of the combs being adjusted at a proper height above the top cards; and it can be still further adjusted, as the sweeps I I, are made in two parts, screwed together by screw bolts, *h*, which pass through slots in one part. In connection with the comb or stripper is a brush, *j*, which may be made of a strip of leather or any soft material, for the purpose of sweeping off the waste stripped from the top cards. This brush is attached to two arms, *k k*, which hang loosely and turn freely on the bar, H, and is confined between metal plates, *l l*, extending its whole length, which is equal to that of the cards. It is capable, by means hereafter described, of being swung or thrown upwards during the operation of stripping, and brought down into position for sweeping of the waste at a proper time.

The mechanism employed for the purpose of turning over the cards, is attached to a plate J, which is attached to the inner face of the front sweep, by screw bolts, *m m*, which pass through slots in the sweep, and admit of its sliding on the sweep; the plate itself is distinctly shown in fig. 2. A lever, K, working on a fulcrum pivot, *n*, secured in the plate, J, carries a stud, *o*, which is adjustable in a slot, and is caused by movements given to the sweep to operate on the periphery of the outer parts of the tumblers. This lever is operated upon two springs, one, *p*, of which is attached to the opposite end to that where the stud, *o*, is placed, the last named end of the lever being bent in a hook form, and the end of the spring being bent inwards back of the lever, so as to come in contact at certain time, with studs, *q q*, placed around the front arcs of the frame of the carding machine at intervals corresponding with the distance between the top cards; the effect of these studs is to raise the end of the lever carrying the spring, and depress the stud, *o*; this depression being necessary at certain times, which will be hereafter explained, for the purpose of allowing the stud, *o*, to pass under the tumblers. The other spring, *r*, is of a hook or bow form, and is attached to the plate, J, above the lever, bearing upon the lever at the back of its hook, in a suitable manner, to raise the stud, *o*, the stud being prevented from rising too high by a projection—not shown, but easily understood—at the back of the plate, J.

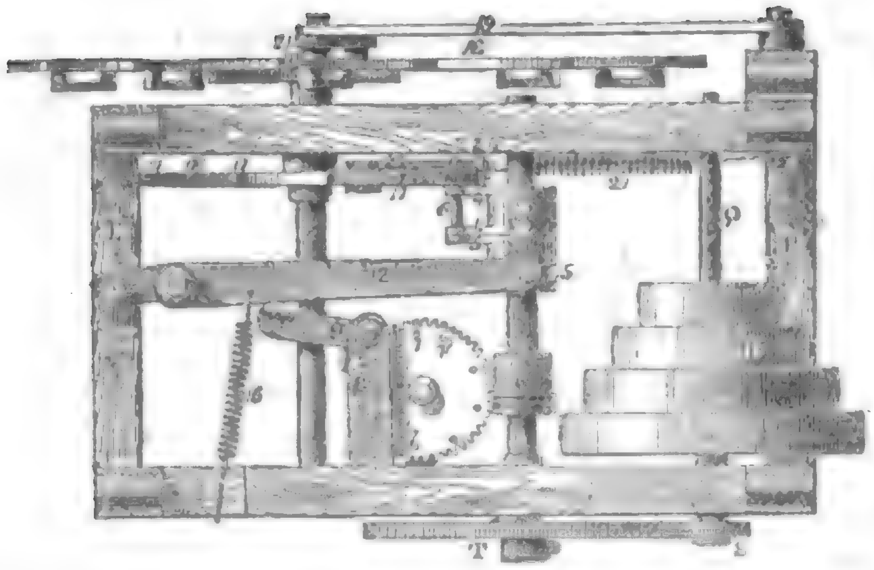
The plate J, is connected by a link, *w*, to the front arm, *k*, carrying the brush, or to a short lever or arm appended to *k*. The lower one of the screw bolts, *m*, is turned down at its end to form a stud, *z*, which extends some distance through the plate, J, and on this stud hangs a catch, *x*, which has two notches, 1, 2, in one edge, at a short distance apart, either of which is capable of catching on a stationery stud, 3, secured in the sweep. A spring, *y*, is secured to the plate, which acts on the catch to keep it on the pin, and while it is so held, the plate, J, will be stationary in relation to the sweep. In figure 1, the lower notch is shown on the pin, 3, that being its position during the entire operation of stripping the cards, the brush being raised, but when the cards are stripped, and the waste is to be swept away, the movement of the sweep brings the upper part of the catch, *x*, above the stud, *z*, into contact with a stop, and releases it from the pin, 3, leaving the plate, J, free to slide on the sweep; the stud, *z*, then comes in contact with the incline, *u*, (fig. 1,) and in passing along it draws down the plate, J, and with it the catch. The plate, J, draws down the brush by means of the link, *w*, and by the time the brush is drawn into position for operation, the catch, *x*, passes a stop, (not shown,) and the spring, *y*, throws its lower part forward, and the notch, 2, which is now opposite to the pin, 3, catches on it and holds the plate down, and keeps the brush in position for operation. The incline, *t*, is for the purpose of throwing up the brush again, the stud, *z*, passing upon it after the waste is swept from the cards; no stop is shown in connection with *t*, to release the catch as it can be dispensed with.

The operation of stripping, and all the operations connected with it, are performed by the movements of the sweeps, I I; the means by which these movements are produced, will now be described:

Attached to the sweeps or to their hubs are toothed sectors, L L, in dotted lines, figure 1, which gear into other toothed sectors, M M, secured upon a shaft, N, below the main cylinder; these sectors are shown. All the mechanism which has now been described, requires to be attached to every carding machine to which the improvements are applied: but the remaining portion of the mechanism which is yet to be described, will serve for as many carding machines as can stand in one line, if their shafts, N, are all connected, and may serve for a still greater number by adding gearing to give the necessary motions to the shaft, N. The sectors, M M, receive their motion through a lever, O, which is secured upon their shaft, the motion being communicated to the lever by a train of mechanism upon a frame, P P, which is distinct from the frame of the carding machine; of this train of mechanism, Q, is the driving shaft, receiving motion through a band running over the pulley, R, and communicating the same through a toothed pinion, S, and wheel, T, to a shaft, U; on this shaft is secured a boss, V, having two arms, 4 4, and also an endless screw gear, W, and fitting loosely on it there is a boss, X, having one projecting arm, 5, to which, parallel with the shaft, is secured a stud, 6, which passes through holes bored in the arms, 4 4, and causes the boss, X, to revolve with the shaft; this stud, 6, when the bosses are close to each other, projects beyond the back face of the fixed boss, V. The endless screw gear, W, gears into a toothed wheel, Y, on a vertical axis: this toothed wheel carries on its upper face a number of vertical studs, 7 7, corresponding with the number of cards in the machines. Each of the studs, in its revolution with the wheel, comes in contact with a stud, 8, secured to one end of a bent lever, 9, whose fulcrum, 10, is in an arm, 11, secured to the front top rail of the frame. The opposite end of the lever to that carrying the stud, 8, bears against the side of a lever, 12, which works on a fixed fulcrum, 13, and is furnished at its end with a pin or stud, 14, which fits in a groove, 15, in the boss, X. A spring, 16, is attached to the lever, 12, and to the frame, which always keeps it forward, and slides the boss, X, on the shaft, U, so as to bring the end of the stud, 6, within the back arm of the fixed boss, V, and leave none of it projecting through, excepting at such times as the studs, 7 7, are bearing upon the stud, 8, when the tension of the spring is overcome, and the lever, 12, is forced back by the bent lever, 9, so as to slide the boss, X, forward, and cause the stud, 6, to project beyond the back arm of the fixed boss. At a suitable distance from the shaft, U, and parallel with the said shaft, there is a shaft, Z, which carries a circular disc, Œ, having a number of slotted openings, 17 17, in its periphery, the number of the said slotted openings, being two more than the number of cards in the machine or machines. Upon the same shaft, Z, at the extreme back end, outside the frame, P P, there is a cam, Æ, in which there is a slot extending all round, and in this slot works a stud, 18, which is secured in one end of an arm, 19, whose opposite end is hung on a fixed pivot, 20, secured in a post of the framing. The stud, 18, is connected by a rod, 21, to a stud, 22, which is secured, but adjustable in the lever, O, on the sector shaft, N. In the slot in the cam, Æ, there are a number of undulations or steps, the number being one more than the number of cards on the machine or machines, and the said undulations or steps being of suitable form to give the required motion through the stud, 18, rod, 21, stud, 22, lever, O, and sectors, M M and L L, to the sweeps, to turn over or open, strip, and close every card in succession—to perform which there is one undulation or step, 30, for every card, and afterwards to return the sweep ready again for commencing operation, to perform which there is one greater undulation or step, 31; the latter undulation or step is shown by dotted lines, as are also all parts of the slot that are concealed. The cam, Æ, receives a part of a revolution every time one of the studs, 7, on the wheel, Y, comes into operation on the stud, 8, of the lever, 9, and causes the stud, 6, to move backward, as every time the stud, 6, is forced forward, it is brought, by the revolution of the shaft, U, into one of the openings, 17, of the disc, and caused to give part of a revolution to the disc. In order to hold the cam steady at those times when it is not in motion, a paul, 23, is hung on a pin, 24, in a standard, 25, below the disc, and a lever, 26, is attached to the paul, and connects by a spring, 27, to the frame; the spring acting on the lever holds the paul up, and causes it to catch in one of the slot openings, until the stud, 6, is coming into operation on the disc; the said stud, 6, previous to entering an opening, comes into contact with the lever, 26, and throwing it forward, releases the paul, and holds it clear of the disc, until it is itself leaving the disc, when the spring, 27, is allowed to operate.

The several parts having been described, and their duties explained, we will proceed to explain the manner in which their operation is conducted.

Fig. 3.



The carding process is the same as in other carding machines, therefore it is not necessary to describe it. We will suppose the operation of stripping to commence with the first card or the one nearest the doffer. The sweeps must be brought to their most forward position, which would be to the left hand in fig. 1; the cam, Æ, would then be in such a position as to bring that part of its slot marked X′, to the stud, 18. As it is only necessary that the top cards should be stripped at certain intervals—say once in fifteen minutes—the cam is not required to revolve continuously, but only to move a sufficient distance to cause one card to be stripped, at such intervals as to make each entire revolution occupy that space of time. The driving pulley revolves continuously, and so do the shafts, Q and U, and the wheel, Y; but as the stud, 6, is drawn forward by the lever, 12, and spring, 16, except when a stud, 7, is in contact with the stud, 8, under the bent lever, it (the stud, 6,) passes the disc, Œ, without touching it, until a stud, 7, acts on the stud, 8, and bent lever, 9, and drives back the lever, 12, and stud, 6, after which the stud, 6, as it revolves, comes into a slot in the disc, and gives part of a revolution to it and the cam; the distance moved by the cam being just sufficient to make one undulation or step, 30, pass the stud, 18. As the first or rising part of the step passes the stud, 18, it raises it, and the rod, 21, raises the lever, O, which causes the sectors to give motion to the sweeps in the direction of the arrow, 32, in fig 1.

Fig. 4.

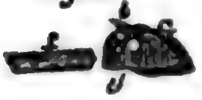


Fig. 5.

As the sweep moves it brings the stud, O, on the lever, K, in operation on the upperside of the front part of the tumbler, G, of the first top card, E, and carries it up or along it, depressing the forward end of it and bringing the angular projection *i*, to bear under the hinge plate *f*, causing the top card to be opened or thrown upwards. Almost as soon as the stud, O, commences running up the tumbler and depressing it, the spring, *p*, at the hooked end of the lever, K, runs over the first stud, *q*, on the arch, D, and raises that end of the lever depressing the stud O, and causing it to throw down the tumbler still further, until at last it (the stud) turns the tumbler so far around as to turn the top card completely over with its teeth upwards and then pass under it. The turning over of the top card is illustrated in figs. 1 and 2; fig. 1 showing one of the cards in the act of turning over, and fig. 2 showing it turned completely over; all the cards except the first one fall over on the next card in front; the first one falls on a screw, 33, provided to receive it. The sweep moving on after the card is turned over, carries the comb, F, past it, but owing to the inclination of the teeth it does not yet strip it. By this time the comb has passed the card, the cam has has brought the stud, 18, to the top of the undulation or step, and it then causes it to descend the opposite or falling side, which depresses the rod, 21, and lever, O, causing the sectors and sweeps to return a short distance. During the return of the sweep, the comb strips the waste from the open top card, and as soon as it has passed it, the pin, O, (the spring, *p*, of the lever, K, having previously passed over the stud, *q*.) is brought into operation on the tumbler so as to make the angular projection, *i*, act on the upper side of the hinge plate and throw over or close the card. By this time the cam has turned so far, that the stud, 18, will have descended the falling side of the first step, or undulation, and at this moment the stud, 6, will, by its revolution become free from the slot in the disc, and the disc and cam will become stationary, the stud, 7, will also work clear of the stud, 8, and the spring, 16, will draw forward the lever, 12, and draw the stud, 6, forward, so that it will not gear into the disc until the proper time for stripping the next card. The waste is deposited on the top of the machine, and on the backs of the cards, and should any hang in the comb it is loosened by the next top card as it passes over it the first time, preparatory to stripping it. When the next stud, 7, on the wheel, Y, acts on the stud, 8, of the bent lever, 9, the cam will make another movement and carry the pin, 18, over the next undulation or step, 30, this will bring the sweeps, I I, and their appendages, including the comb, in operation on the next card, and turn or open it, strip, and return or close it, in precisely the same manner as the first. Thus the operation proceeds, every step, 30, of the cam causing a card to be stripped, until the cards have all been acted upon, and the commencement of the long undulation or step, 31, arrives at stud, 18. One of the studs on the wheel, Y, marked for distinction, 7′, is elongated in the direction of its revolution, so that it remains in contact with the stud, 8, on the lever, 9, for a considerable time, long enough to cause the stud, 6, to operate in two slots of the disc without being withdrawn forward; it being necessary to give two movements of the same length as all the others to the disc and cam, in order to carry the whole of the step, 31, past the stud 18. As the first or ascending part of the step, 31, passes the stud, it raises it, and causes the sweep to move on in the direction of the arrow, 33, and bring the catch, *x*, against the step, behind the sweep, fig. 1, to release the 2late, J, and then carry the stud, *z*, down the incline, *u*, which draws down the plate, J, and brings the brush into a position for operating as described. When the top of the step, 31, passes the stud, 18, the descending part comes into operation on it, and carries it down, depressing the rod, 21, and lever, O, and moving the sectors sufficiently to carry the sweeps back to their first described position, sweeping all the waste on to the cover of the doffer. During the latter part of this last described movement of the sweeps, the stud, *z*, travels along the incline, *t*, and raises the brush. The next movement of the cam is the same as that first described, and the succeeding operations of the machine are repetitions of those just explained.

JOB PRINTING PRESS.

Mr. George P. Gordon exhibited a Press, patented in 1851, designed for small job printing, which did its work admirably. It is capable of printing 1,500 impressions per hour, and is adapted to print from a single line to a form the size of half a foolscap sheet. It is worked with the foot on a treadle, or steam may be used. The space occupied by it is three feet square, rising about four feet from the floor.

The platten of this press presents itself directly in front of the operator, nearly in a horizontal position, upon which the paper to be printed is laid. The platten has a rotating and reciprocating motion, that is, it has a quarter revolution, which brings the platten into a vertical position directly opposite to the form and point of impression, and then a return motion, which brings it again to its horizontal position. This motion is communicated by means of a cam, sectional arm, and its own segment geared with the sectional arm, causing the platten to move in the arc of a circle when passing from its position where the sheet is placed upon it, to that where it receives the impression.

The bed vibrates, and is fixed upon its own axis, so that it may recede into the proper position for receiving the inking rollers on the face of the form. Its position is vertical, standing parallel to the face of the platten when the toggle is straight and the impression given.

The rollers are held by two side arms, so combined as to form a frame to carry them, and motion is communicated both forward and backward, passing twice over the form for each impression during the rest of the other parts of the machine. By this arrangement, the carriage with the ways for it to travel in, which is in common use, are dispensed with.

The inking cylinders, vibrating distributor, &c., are placed upon the top of the press, so that they are constantly under the eye of the operator, being convenient for cleaning, change of ink, &c. The machine is operated by one person with apparent ease.

A. C.

MODELLING.

A very superior specimen of modelling was exhibited at our last fair, which justly attracted general admiration. It consisted of a colossal dog in bronze, representing a large dog, who having broken his chain is roaming at large and suddenly stops at the sound of a familiar voice. The idea is most beautifully illustrated in this production. As a work of art it possesses great merit, is decidedly original, and reflects honor on the artists.

It was designed and modelled by Thomas F. Hoppin, of Providence, R. I., and cast in bronze by the Messrs. Audubon at the Minnesota Foundry, under the direction of Messrs. Bogardus & Hoppin, of New-York. A. C.

MODEL OF A DISABLED SHIP.

Capt. J. G. Lawton exhibited a well constructed model of the ship Warren, as she arrived at the port of New-York during the winter of 1850–51, having been 109 days on her passage from Glasgow to this port. After being 31 days out, the vessel lost her rudder, and was rendered almost a complete wreck, in one of those severe gales which swept the Atlantic ocean during that winter. She remained at the mercy of the storm and rode it out. After 15 days Capt. L. had constructed a rudder out of a hemp cable, and attached it to the vessel, with the assistance of which, and the few sails they were enabled to spread, she reached her port after a further space of 63 days.

A model of the rudder was also exhibited, and the method of attaching it to the ship. The whole reflects great credit on the commandant of this vessel, and strikingly illustrates the influence of dire necessity on the faculties of our race. A. C.

NAVAL ARCHITECTURE.

The original model of the yacht America, by George Steers, was placed on exhibition. It attracted much attention, and our judges reported the model as "worthy of all praise and entitled to the highest premium." It received the Gold Medal of the Institute.

The model of the steam ship Illinois, designed by Messrs. Smith & Dimon, of New-York, the model executed by Mr. Henry Owens, 158 Lewis street, New-York. The judges reported the design as the best on exhibition, and that the execution of the model in point of workmanship was the best they had ever seen. The design received the Gold Medal, and the artizan for the workmanship displayed in constructing the model, the Silver Medal of the Institute.

The model of a clipper ship by L. H. Boole, 191 East 15th st., New-York, was reported favorably on by the judges, and received the Silver Medal of the Institute.

PALMER'S IMPROVED PATENT ARTIFICIAL LEG.

Messrs. Palmer & Co., Springfield, Mass., exhibited their improved artificial leg, of which the judges on surgical instruments speak in terms of the highest commendation, and close their report by saying, "it is superior to any other ever constructed, and merits for science and humanity the highest testimonial of the Institute."

The body or skeleton of the leg is made from pieces of solid willow wood, it being the lightest and strongest material applicable to such purpose. The thigh, leg, and foot pieces are made hollow, and carved externally so as to imitate the natural leg in size, form, and symmetry. The knee, ankle, and toe joints have the motions of the natural limb, including the ball and socket formation; this is an ingenious improvement over the mortice and tenon and metalic joints. The ball and socket joints are retained in their relative positions by strong metalic plates attached vertically and immovably to the sides of the leg, through the ends of which strong hollow bolts pass and are also immovable, and upon which the thigh and leg pieces receive their bearings in their flexions and extensions, through the whole diameter of the joints in solid wood substantially bushed. By this new and substantial arrangement, no motion of the metalic parts where they unite, is permitted; friction is reduced to the least possible degree, oil is dispensed with, and all the lateral motions and noise, peculiar to other kinds of joints, are prevented.

The internal arrangements are strikingly in keeping with the anatomical structure of the natural limb. Through the ingenious application of springs, cams, eccentrics, and cords, the entire limb is moved, controlled, flexed, and extended with the most perfect ease and reliability. The movements very closely resemble the natural limb. A lever and spring adjusted in the lower part of the thigh and attached to the leg, serves to extend and control the knee joint, thus answering the extensor muscle of the natural leg; while opposite and opposed to the extensor, a strong cord is inserted behind the knee joint which suspends the action of the leg when sufficiently extended, answering the action of the semi-branaceous and crureus muscles or ham-strings of the natural leg. This arrangement prevents that unpleasant concussion peculiar to all tenon and mortice joints, as used in previous constructions.

A large and very strong heel cord, answering to the gastrocnemii muscles or tendo Achillis, extends from the heel up into the calf of the leg, where it is connected with a cam playing upon an eccentric, which in its turn is connected by a lesser cord with the thigh, by which it is operated to extend the foot and also enabling the wearer to throw his whole weight upon the ball of the foot, as upon the natural one, in walking, lifting, getting into carriages, ascending flights of stairs; and at the same time affording a strong and life-like elasticity in walking.

The foot and toe spring, and cord, which answer to the flexor muscles of the ankle and toes, to elevate the one, and firmly compress the other to the ground, as experienced in walking, is a compound arrangement, flexing the foot upon the ankle and elevating it, thus antagonising and alternating the action of the heel cord which extends the foot and enabling the wearer of the limb to carry the foot easily and freely over any obstacle in its pathway, and at the same time have the artificial leg precisely of the same length as the natural leg, an arrangement long desired.

The entire external surface of the skeleton or frame work of these limbs is covered with a green parchment indissolubly attached to it and apparently seamless; which prevents the possibility of the light casement splitting and renders it perfectly reliable. The surface of the parchment is covered with a waterproof cement, colored to resemble the natural limb, which may be kept perfectly clean by the use of soap and water as often as required.

We saw a gentleman at our last fair wearing a pair of these artificial legs, having lost both the natural ones. They were nicely adjusted, enabling him to walk without limping or halting, so much as scarcely to be perceived, and without a cane. We should not have entertained the slightest suspicion of the fact, indeed would not have believed it, had not the gentleman exhibited to us the veritable limbs made by Palmer & Co., upon which he had been walking with so much apparent ease.

PEARL AND SHELL WORK.

This is, comparatively, a new branch of manufacture in the United States, and we are not a little surprised at the perfection to which it has recently been carried.

The specimens of pearl work boxes, handles for dentists' instruments, &c., from A. Ruddock, Philadelphia, were very superior, and reflect the highest credit on the artists. They excel any former exhibition made in the U. States.

G. R. Chowlwell, 26 Maiden Lane, exhibited an assortment of pearl and shell card cases, pearl and leather porte-monnies, of the most exquisite workmanship, superior to anything of the kind heretofore made in the United States. We are exceedingly glad that these arts are making such progress with us, they will furnish employment to a multitude of workmen, and retain at home large sums of money which heretofore have been annually expended abroad. To whatever extent we are enabled to indulge in luxuries, let us produce them at home, and their cost may be counted as clear gain.

MANUFACTURE OF LINEN THREAD.

The display in this department at the last fair, surpassed all former exhibitions. The report of the judges is very full, containing facts of sufficient interest to warrant us in publishing it entire, which we do with thanks to the committee.

"The committee on linen thread are happy to announce the triumphant success of Messrs. F. W. Farnham & Co., in producing an article of thread, (as exhibited in numbers 1877 and 1878) which, after a careful examination,, we have reason to think is in all respects not only *equal* to the best foreign brands, but vastly superior to the great majority of imported threads so largely consumed in this country. This company having availed themselves of the latest improvements in flax machinery, and aided by the ability and practical experience of Mr. G. K. White, have thus, at the outset of their enterprise, surmounted every difficulty in producing an article in this new and important branch of American manufacture, which challenges the admiration and merits the patronage and good will of every friend to American interest. This thread possesses, in an eminent degree, the following essential requisites:

1st. Strength;
2d. An even, glossy, wiry surface;
3d. Pure, brilliant color.

In the dying department, this company have accomplished wonders, not only in the great variety of shades presented, but in the richness and delicacy of a large majority of the colors.

We are indebted to a member of the company for the following statistics:

Their factory is situated at Cohoes, N. Y. Capital invested, $100,000. The building is 220 feet in length, and has two water wheels of 85 horse power each. The preparing departments for flax and tow are calculated for 6,000 spindles. In the spinning and twisting department, they are now running 2,000 spindles, and intend, in due time, to run the full complement of 6,000. They at present employ 120 hands, and when in full operation will employ 150. They now produce about 2,000 lbs. of thread per week, and will soon be able to increase their production to 3,000 lbs., or about 150,000 lbs. per annum, averaging in value, say $100,000.

It is to be hoped that such an undertaking will not be permitted to falter or fail for lack of patronage from dealers and consumers, especially when the article in question excels, in so many respects, a vast proportion of the linen thread imported and vended throughout the country. Let this new and promising branch of industry be duly encouraged, and the working of our own flax and spindles will, inevitably, and at no distant period, blot out a large item of our present imports.

The two cases of linen thread from Coffin, Bradley & Co., also afford very creditable specimens of the same article, which deserve encouraging notice."

FREDERICK A. LEE,
WM. E. SHEPARD,
HAYNES LORD,
Judges.

PROTEUS CHAIR.

A chair, under the above designation, or rather a lounge for invalids, was exhibited at the last fair by Mr. P. O'Niel, Philadelphia. It can, with very great facility, be adapted to almost any required position for the human body, having twenty-five distinct changes produced by mechanical arrangement, and exceedingly simple. For invalids it would seem to be invaluable, and its appearance in any room is not objectionable. It received the Gold Medal of the Institute. A. C.

ROCKINGHAM WARE.

No stronger indication of the power and will of our great and growing country to supply her own wants, can be found in any department of the industrial art, than in that of *Potting*, as now carried on in the United States.

Gradually, but surely, are we gaining ground upon our competitors of the old world in this art, no less than in that of spinning, weaving, forging, and the higher walks of Sculpture, Literature and the Pencil.

From facts, as well as efforts of the intellect, are we to judge of the independence of a people; and the annual exhibition of our own Institute, we deem, above any and all other schemes, best calculated to bring before the nation and the world the true source and firm foundation of our nation's pre-eminent position.

In our immediate neighborhood potting has been carried on to limited extent for a considerable time, but with indifferent and varying success. It has remained for the *Great West* to add another branch to the already cumbersome wreath, by springing into active operation on the banks of the Ohio, a community of nearly two thousand souls, supported entirely from the profits of successfully manufacturing various articles of use and ornament from the *soil* upon which their city is built. The difficulties with which our eastern manufacturers have had to contend in the procuring of coals and materials, are there entirely overcome by the benificent hand of nature, and we now witness the strange anomaly of Eastern potters *importing* ware from the *West* at cheaper rates than they can manufacture, notwithstanding the heavy cost of transportation.

Our late exhibition was remarkable for the display which competition in the perfection of various improvements recently introduced, has brought from the works of Messrs. Lyman & Fenton, Bennington, Vt., Messrs. Bennett & Brother, Pittsburgh, Pa., and from Messrs. Woodworth, Blakely's & Co., East Liverpool, Ohio. The Committee, in awarding the premium, could not overlook the soundness which has always characterized the ware of the Messrs. Bennett—they having taken the highest premiums heretofore given—nor could they withhold their admiration of the beautiful coloring produced in the Bennington ware, yet, on finding the specimens from Woodward & Blakely's & Co., combining the *quality* of the one with the *beauty* of the other, coupled with the most exquisite modeling, they could not but award them the highest and best honor of the Institute—a Gold Medal.

There are at present eight manufactories in full operation in the town of East Liverpool, of which the largest and most important is that of Messrs. Woodward, Blakely's & Co., their property covering acres of clay which ages will not exhaust, and their present works consisting of a range of brick buildings three hundred and fifty feet in length, with sheds and out-houses covering the square, and three mammoth ovens in constant blast, turning out from ten to fifteen hundred dollars in value of merchantable ware per week, and giving employment to nearly one hundred hands.

CLAY'S PATENT ROLLED TAPER IRON.

Wrought iron in this form has heretofore been produced only by the slow and expensive process of forging under hammer, and it has been considered impracticable to roll it. We believe the first attempt at rolling tapered iron, was by means of eccentric rolls. But the length of the taper being always limited by the circumference of the roll, and the pressure being unequal in the different parts of its revolution, (the whole taper being necessarily given in a single revolution) this plan was soon abandoned. The next attempt was with bevel wheels placed on the heads of the screws which holds down the top roll. This succeeded to a certain extent, but was found to be liable to some of the same objections as the preceding plan, and the shafts and gearing were much in the way of the workmen. Revolving eccentrics were then proposed to be placed at each end of the roll and bearing on the journals. These presented no substantial advantage over eccentric rolls. Then a hydrostatic press was suggested to force down the roller as the iron was passing through, but it was found not to act with sufficient promptitude.

Mr. Clay's plan is more simple and more efficient than any of these, and at the same time is unlimited as to the length or rate of taper that may be obtained by it. The principle on which it acts is that of hydrostatic pressure by means of a small chamber set on top of each housing, the plunger of which acts downwards, but instead of forcing water into the press, the chamber is first filled with water, and the pressure of the iron in passing between the rolls, tends to lift the top one, which is held down by the plunger of the press. An escape pipe, provided with a valve, is placed on the top of the chamber. When any upward pressure acts on the top roller, it is communicated by the plunger to the water, which then is forced out through the valve and the roll rises. By partially closing the valves, the water escapes more slowly, and the rise of the roll, and consequently the taper of the iron is more gradual. Thus it will be perceived that any rate of taper may be had by simply regulating the size of the opening in the escape valve. If the water is all drawn out before the bar is entirely through the rolls, the top roll ceases to rise, and the iron is parallel from that point. Then if the bar is turned end for end, and again put through the rolls, the parallel portion will be tapered. By this arrangement there can be obtained a bar regularly tapered from end to end, or tapered part of its length and parallel the remainder; tapered from both ends to a point any where in its length; tapered at each end and parallel in the middle, or alternately tapered and parallel, by opening and shutting the valve as the iron is passing through the rolls.

Wrought iron thus pressed, enters into the following uses: It is applied for iron knees in ship building. Vessels constructed with iron knees, will stow a greater bulk than when wooden knees are used. Paddle wheel arms for steamers are flats tapered edgewise. The leaves of elliptic springs are tapered at both ends and parallel in the middle. Short switches and pointers on railroads are regular tapers. Locomotive pedestals are forged in straight bars tapered at each end and parallel in the middle, and afterwards bent. The common form of carriage axle, known as the patent axle, is square next the journal and tapered to the middle of the axle. Straps for walking beams and connecting rods, and all kinds of levers are tapered; anchor shanks are tapered, rounds passed through flat rollers, making them tapered ovals. Windlass necks are tapered squares.

The specimens exhibited at our twenty-fourth Annual Fair were the first and only ones rolled in the United States by this process. Iron thus manufactured, we are informed, can be furnished at three cents per pound, whilst the same material, forged under the hammer, will cost six cents per pound. The works are established at Phœnixville, Pa., under the direction of the proprietors, Messrs. Reeves, Buck & Co., Philadelphia.

TERRA COTTA, OR ARTIFICIAL STONE.

When composed of good materials and well manufactured, forms a substance of great durability, being apparently indestructable in all situations. It is composed of pipe or potter's clay, with a due admixture of fine-grained sand and pulverized broken pottery. These ingredients, mixed to the consistence of paste, are modeled or moulded into a great variety of forms, such as statues, architectural decorations, vases, garden ornaments of various kinds, &c., and having been slowly dried in the air, may be fired to the hardness of stone in kilns constructed for that purpose. This material has been made for many years successfully at Berlin, and Dr. Ure describes very minutely the kilns used there by Mr. Feilner, which are economical in the use of fuel. It appears, also, that Mr. Keene obtained within a few years, a patent in England for making an artificial stone paste, in the following manner: "He dissolves one pound of alum in a gallon of water, and in this solution he soaks eighty-four pounds of gypsum calcined in small lumps. He exposes these lumps in the open air for about eight days, till they become apparently dry, and then calcines them in an oven at a dull red heat. These lumps being ground and sifted, afford a fine powder, which when made up into a paste with a proper quantity of water, forms the petrifying ground. The mass soon concretes, and after being brushed over with a thin layer of the petrifying paste, may be polished with pumice, &c., in the usual way. It then affords a body of great compactness and durability. If half a pound of copperas be added to the solution of alum, the gypsum paste, treated as above, has a fine cream or yellow color."

We have made the above statements introductory to a notice of the exhibitions in this department of art which were made at our last fair. The principal exhibition was made by Mr. Alexander Young, of the city of New-York. It consisted of the entire trimmings of a door, somewhat elaborately finished, with a variety of architectural and garden ornaments. Mr. Young has been engaged in this manufacture about two years, endeavoring to introduce it for building purposes; he refers to several buildings which have been trimmed with it, here and elsewhere, as a substitute for stone, particularly to the St. Denis Hotel, a large building on the corner of Broadway and Eleventh-street.

It is claimed for Terra Cotta that, it is as strong and as enduring as brown stone or marble; it can be elaborately finished at half the cost of either; its natural color, although it may not suit the taste of every one, is far from being objectionable; it will stand the fire better than any stone used for the same purposes; paint adheres to it with great tenacity, consequently it can be made to imitate other substances very closely. Mr. Young informs us that pulverized pottery is not used in his composition, but all the materials are abundant and at hand. The Gold Medal was awarded to Mr. Young.

Mr. Edward Roach, of New-York, also made a good display of this material, in vases, ornamented capitals, garden ornaments, &c.

Mr. George Saul, of Melbourn, N. Y., exhibited specimens of bronzed Terra Cotta. It has occurred to us that this material is admirably adapted for enclosing and ornamenting plots in rural cemeteries, more enduring, and preferable to iron railings.

A. C.

ZINC PAINTS.

The New Jersey Mining and Exploring Company, made an interesting display of the zinc Paints manufactured by them, and which the company are now ready to furnish in any required quantity. These paints consist of the following: Zinc white; this is the pure white oxide of Zinc, and we sincerely rejoice that it is capable of being produced in sufficient quantities and at prices that enable it to compete with white lead as a pigment. The use of white lead, particularly for the inside finish of our dwellings, cannot too soon be discarded. There is no doubt in our mind that white lead has had a tendency to aggravate the diseases of the invalid members of every family in the domicile of which it has been permitted to be used, from its commencement to the present day. Light brown paint; this is a pure metalic oxide, having zinc for its base. Dark brown paint; this also is a pure metalic oxide, having zinc and franklinite for its base. These, as coverings for metalic surfaces, are unequalled. Black zinc paint, is produced by the addition of lamp black. There is also a delicate blue paint produced in the process of manufacturing zinc metal.

The New Jersey exploring and mining company, offered a special premium of $175 through the American Institute at its last Fair, for the three best specimens of pannel painting with the zinc white of their company; to be divided thus: $100 for the best; $50 for the second best, and $25 for the third best. The work to be done in gloss and dead-work, and finished with a brush. This offer, which was made at rather a late period, brought forward nine competitors. The work they exhibited was admirably done, and it required experienced workmen to discriminate as to quality. The decision was submitted to five competent painters, who after a faithful examination, made the following awards:

First premium to J. W. Jones, Brooklyn, L. Island.
Second do to Aston & Seabury, New York.
Third do to Radcliff Carman, New York.

A. C.

COMMUNICATIONS.

To the Board of Managers of the Twenty-fourth Annual Fair of the American Institute.

GENTLEMEN :—Agreeable with the requirements of your instition I hand you a few remarks on the agricultural and garden products grown by me, and exhibited at your late exhibition.

Indian Corn.

The cultivation of the thirty-four varieties was the same as that of the previous year, a detailed statement of which you have in the last number of your transactions. All were grown on clay loam and a portion of the land employed has for the last four years been under cultivation for this exhausting crop, which to me is another evidence of the importance of the system of manuring as recommended by the most intelligent agriculturists of the present time, which in substance is furnishing the soil with the constituents of the plants, or in other words supplying the plants with proper food to feed upon, and a good return is a sure result.

The important rank occupied by this grain in the agricultural products of our country, its great capabilities of production for sustaining animal life and being, as I believe now conceded, indigenous to our soil, it justly claims the attention of every tiller of the land and notwithstanding the great improvement made by cultivation, we may still suppose that it is far from its zenith and its capabilities for production not yet fully known.

To trace its rapid advancement we scarcely need go further back than the commencement of your annual exhibitions which no doubt have given a stimulus to this as well as other important productions of our republic. Seldom a year that does not bring to your exhibitions new varieties of maize or marked improvement in those previously known, many of which as objects of curiosity are worthy of our admiration, but more important are the splendid ears which annually notes its progress; as for example the specimens of white corn from Monmouth county, N. J., and Long Island, evidences of improved seed and superior cultivation.

It has been stated that the numerous varieties were the representatives of but one species, but have we not as strong grounds for claiming for the white, yellow and sweet corn, distinct specific origin, as we have for many specific distinctions in other departments of Natural History.

It is not to be expected that every cultivator, especially those who look for immediate pecuniary returns, will indulge in many varieties during one season, nor would it be advisable, but of a grain so important too much cannot be known, and while testing the capabilities of a large number of varieties, grown under circumstances equal, some good results may be obtained, or at least it is worthy of the effort.

The remarks on the growth of the several varieties of corn plants, are given from actual measurement taken from the average height when at maturity.

We are aware that the length of stalk as well as ear, is more influenced by circumstances, but believe that the measurements generally, will be found corresponding with those grown in other localities, on average good soil, under fair cultivation.

The large number of varieties grown on the comparatively small extent of land, prevents giving a satisfactory statement of the respective product and cost. Sufficient, however, has been ascertained, to govern the producer in selecting those adapted to circumstances, such as soil, situation, and opportunity for procuring a sufficiency of manure, and if answering no other purpose, trust that the following synopsis of this extensively cultivated grain will not be uninteresting.

VARIETIES OF WHITE CORN.

"*Long Island or Douglass.*"

Of all the varieties of White Flint, I prefer this for general use. It grows eight and a half to nine and a half feet high, producing five to six ears to the hill of four plants, and ripens in four and a half months. Ears ten to twelve inches long; rows, eight. Introduced to Long Island by Mr. Douglass, whence its name.

"*Elongated White Flint.*"

This is an elegant variety, highly deserving of cultivation, and by some considered superior. It requires five months to mature in; stands ten to ten and a half feet high; produces one eight-rowed ear, (seldom more,) thirteen to sixteen inches long, and I have occasionally seen them eighteen inches.

"*Twelve-rowed Jersey White Flint.*"

Grows nine and a half to ten feet high; ears usually eleven to twelve inches long; rows regular, and well filled out; ripe in five months. A rich variety, requiring good soil, and thorough cultivation.

"*Slender White Flint.*"

The growth of this variety, remarkable for its slender ear, is eight and a half to nine feet. The grain is of medium size, closely set in eight rows, on ears eleven to thirteen inches long, which taper slightly towards the apex, terminating in an abrupt point. It ripens in sixteen weeks, and is well adapted to the northern States.

"*Rhode Island Cap.*"

This variety much cultivated in the northern and eastern States is, I am induced to believe, identical with "Canada Cap," and freely grown in Canada, where it is greatly esteemed on account of its early advancement to maturity, happily answering the requirements of the short corn-growing season in that country.

It stands seven to seven and a half feet high, produces one and two ears, seven to eight inches in length, well covered at apex; rows eight at base, ten forming a cap, from which circumstance, as well as being fully covered at summit, we trace the origin of its name.

"*Large Virginia Dent.*"

Requiring a long season to mature in it is better adapted for cultivation in the southern states. With me it grew ten to eleven feet high, producing stalks of unusual stoutness, the leaves broad and heavy, and in view of fruit and foliage it is a most luxuriant plant. It rarely produces more than one ear which is from ten to twelve inches long, twelve rowed and well filled out. At the expiration of five months the sheaths were still green and requiring a large supply of manure to sustain it until maturity—do not even as far north as the present locality consider it desirable for general cultivation.

"*Ohio Dent.*"

This as I learn, the favorite of the farmers of the State from which it receives its name, attained the heighth of thirteen to fourteen feet; stalks comparatively slender and very straight supporting its fruit four and a half to five feet above the ground, producing one, occasionally two ears eight to ten inches long and from twelve to sixteen rows; grain milk white; the depression on the crown continuing to the summit, which is not fully covered.

Though better adapted for cultivation in the south-western States, it is nevertheless a rich variety. Its stately and handsome growth renders it attractive on the field, and no doubt when grown on the rich alluvial soil on the margin of the Ohio, yields to the cultivator a return equally if not more remunerative than our best varieties do to the growers in the northern States. Time required for ripening five months. Resembles the Oregon; the ears, however, are not so stout, and the rows more regularly set.

"*Oregon.*"

A large variety said to be in general use on the western side of the continent; grows twelve to thirteen feet high; ears usually one, nine to ten inches long, some sixteen to twenty, and in some specimens have counted twenty-six; rows at base irregularly set, hence toward the summit straight and closely set; grain large, much wedged, crown depressed, which marking is fainter at base and toward the extremity. Full five months required for ripening.

" *Small Dent.*"

Ears six to seven inches in length, tapering abruptly toward the summit, which usually is not well covered; rows twelve; grain irregularly set at base, with a marked depression on the crown, the entire length of the ear; cob light red; stalk nine and a half to ten feet, seldom producing more than one ear; planted first of May, ripe middle of August. Freely grown in the Western states, where it is prized as an early variety. Seed from Sciota valley.

" *Tuscarora.*"

A substantial table variety; grain large, wider than deep; cob red; ears eight to nine inches; rows usually eight; height of plants six and a half to seven feet; ears fully six to four plants; well known to garden cultivation; sweet flavor of sugar corn absent; much prized on account of its whiteness when ground into meal, hence the name of flour corn; grain smooth when dry, with slight depression on the crown; ripe in twelve weeks.

" *Stowel's Evergeen Sweet Corn.*"

The cultivation of this variety superior when green for table use, is in our section quite recent. It was first introduced to the markets of Philadelphia by Mr. Stowel, of that vicinity, and if allowed I would add to its already lengthy name by calling "Stowel's evergreen prolific sweet corn.

In regard to its producing qualities I can only say that it yields more generously than any variety of maize which has come under my observation excepting the unimportant ornamental " nonpareil."

In good soil it grows seven to seven and a half feet high producing from two to five ears and a specimen exhibited at the last fair, by Professor Mapes, had seven all well formed.

The ears are six or eight inches long containing twelve to sixteen rows and in some examples a larger number.

It also recommends itself to our notice by possessing the property of continuing of it for a much longer period than any other kind adapted to similar purpose which great advantage will be readily appreciated by those who grow corn only for table use.

A striking peculiarity with this variety is that it will not germinate until kiln dried, which feature is still more remarkable when we reflect that all seed requires moisture before germination can commence.

So irreconcilable did this now ascertained fact appear, notwithstanding the high authority from whence it came, I ventured the first planting without such preparation and the result was that every grain rotted, while seed of an ordinary variety planted at the same time under similar circumstances came up as usual.

Subsequently on procuring seed properly prepared through the liberality and public invitation of the editor of the "Working Farmer," I made the second trial and am not aware that a single grain failed. It was as dry as horn, nearly transparent and by many doubts respecting its ability to germinate, were expressed.

"*Twelve Rowed Sweet Corn.*"

Growth seven to seven and a half feet, ears one and two occasionally three, six to eight inches long, rows twelve not unfrequently fourteen, grain large and like all other varieties of sweet corn shriveled when dry, which circumstance* Mr. Salisbury author of prize essay for best analysis of Indian corn, attributes mainly to the presence of a large percentage of albumen and dextrine.

Planted first of May, suitable for table twenty-seventh of July.

---

*See Transactions New-York State Agricultural Society, 1848, page 888.

"*Early Burlington.*"

Growth five to five and a half feet; ears stout, usually are five to six inches in length; grain, dull white, irregularly set, crowns depressed, apex not well covered; general appearance of ears rough; good for early use; sweet flavor of sugar corn wanting; ripens in nine to ten weeks.

"*Early Canada.*"

Plants five and a half to six feet; ears one and two, tapering; rows eight, regular and firmly set, apex well covered; appearance smooth and handsome, flavor mealy; ripens in about the same time as the former, desirable only for early garden cultivation; length of ears six to seven inches.

"*Rice Corn.*"

Until recently this beautiful variety was grown almost entirely for ornament, but has now obtained a marketable value, to supply the demand for "pop corn." The traffic in which I learn is yearly increasing, possessing a hardness above all others; it is best adapted to such purpose, and in fact I believe the only kind used. It readily commands one dollar per bushel, of ears, and being quite productive, am not sure that a few acres devoted to its cultivation would not be profitable.

Requiring a long season to ripen in, it should be planted early In good ground and well attended, it will grow seven to seven and a half feet high, and produce four to six ears, and sometimes more, to each plant. The ears have fourteen to twenty rows, and are furnished with an unusually heavy coating of sheaths or husks. The rows are regular, with deep channels formed by the corneous portion of the grain, which greatly predominates; length of ears five to six inches.

"*Mandan, or early six week's Garden Corn.*"

For the seed of this interesting variety, I am indebted to Mr. John G. Bell, to whom agriculture and other departments of science, especially Natural History, has received much valuable aid. It was procured by Mr. Bell, at the "Mandan village," on the upper Missouri river, and appears to be the only variety known to the rude cultivators of that country.

Its chief merit is its rapid advancement to maturity. I have had it suitable for the table in seven weeks after planting, and am of opinion it can be brought forward in time to justify the propriety of its extended name.

Its growth is four to four and a half feet; stalks very slender, tapering to a whip like form, supporting at six inches from the ground one and two ears, eight rowed, from five to seven inches long.

Nonpareil.

The pearl, or chicken corn as it is more generally termed, is the smallest variety known. Its cultivation is confined to gardens, and is grown for ornament. It appears in various shades of color, and is one of the varieties annually sent to England, where it is exhibited in the windows of the seedsmen and florists, and admired as a vegetable curiosity.

Growth four to five feet, ears three to five, and have known thirteen perfect ears produced on a single plant; grain hard and firmly set in regular rows on a slender cob from four to five inches long; ripens in four months.

VARIETIES OF YELLOW CORN.

"*Golden Sioux.*"

This, the richest and most elegant of the yellow corn, will, in good soil, attain the height of nine and a half to ten feet, producing, usually, one splendid twelve rowed ear from 12 to 14 inches long.

Grain bright yellow, lighter on the crown; corneous portion predominating, forming distinct furrows entire length of ear; apex well covered; ripens in five months; requires thorough cultivation, of which it is highly deserving.

"*Dutton.*"

Height of plants seven to eight feet, ears one and two, rows twelve to eighteen; when well grown the apex is completely covered; ripe in fourteen to fifteen weeks; a well known variety, much esteemed on account of the short season required for maturing, as well as its capability for large production. When planted early, will arrive in condition to sow the same ground with late turnips; length of ears 8 to 9 inches.

"*Large eight rowed.*"

Grain dull yellow, lines deep and four broad, ears eleven to thirteen inches, seldom produces more than one apex; height of plants eight to nine feet; foliage dense; ripe in five months; an excellent and productive variety.

"*Medium eight rowed.*"

A good variety, and extensively cultivated; differs from the preceding in the reduced size of the entire production, and ripens in a shorter season.

"*Early Canada or Canadian Yellow Flint.*"

Plants five and a half to six feet; ears six to eight inches, fully six to four stalks, and under favorable circumstances, a larger yield; rows, eight regular, and extending over the summit; ripe in fourteen weeks, and well adapted to cultivation in the northern States.

Not extensively cultivated in this section, generally considered unimportant in consequence of the reduced length of ears, but with thorough cultivation, will produce largely. The moderate heighth attained by the plants with corresponding foliage, it admits of close planting, and have been informed that on the well conducted farm of Dr. Crispel, of Ulster county, N. Y., it has, when planted in hills two and a half feet apart, and the cultivator kept actively employed, produced one hundred and twelve bushels of shelled corn to the acre.

"*Slender Yellow Flint.*"

A handsome eight-rowed variety, growing seven to seven and a half feet high, producing one and two slender tapering ears, ten to twelve inches long, much attenuated towards the summit; rows regular, and well filled out; grain deep orange; ripe in fourteen weeks.

"*Kentucky Dent.*"

A rich variety freely grown in the western States, where it is familiarly known as the long grain and small cob; ears usually one, situated feet from the ground; rows generally sixteen, with deep furrows between; grain bright yellow, lighter on the crowns, which are much depressed; cob red; ears eight to nine inches. With me it grew eleven to twelve feet high, and ripened in five months.

"*Orange Cone.*"

A well defined and attractive variety, growing six and a half feet high, producing midway on the stalk, one and two ears six to seven inches long, and fourteen to eighteen rows. Grain furnished with a projecting pointed flap, forming broad and deep furrows between the rows, which are regular and well filled out. Crowns deeply indented; ears conical.

Grown from a single specimen procured in Orange county, State of New-York, but could obtain no further information respecting it, and believing its place in the long list of maize unoccupied, have in the mean time, from locality, color, and form, introduced it under the above title.

Ripens in four months and is deserving of cultivation.

"*Flesh colored.*"

In regard to the propriety of recognizing this as a distinct variety, I have doubts, and am of opinion from specimens now before me grown from seed said to be pure, that it is a recent cross with the medium eight rowed yellow and hematite, which further cultivation will better determine. Grain redish yellow on the sides, lighter on the crown; rows eight; growth, produce and time required for ripening corresponding with the medium eight rowed yellow, of which we have spoken.

HEMATITE VARIETIES.

"*Large twelve rowed.*"

This as well as all the others of similar complexion is better known as the velvet or brown corn.

In this section it is not much cultivated, notwithstanding it is elegant and productive, and recommends itself to our attention by maturing in a shorter season than is required by its lighter colored representatives.

It attains the height of nine to nine and a half feet, and like all the other large varieties produces usually but one well formed ear; rows twelve, in some examples fourteen, firmly set on a red tapering cob, with the apex generally naked. Length of ears eleven to thirteen inches.

"*Medium eight rowed.*"

Height of plants seven and a half to eight feet; ears one and two; rows well filled out; length of ears ten to eleven inches.

"*Small eight rowed.*"

Distinguished on the field by its reduced size and assuming at an earlier period the autumnal hue; grows six to six and a half feet high; ears seven to eight inches long, fully six to four plants; ripe in fourteen weeks.

"*Hematite Sweet Corn.*"

A good variety but not so desirable as the twelve rowed, outstriping it in growth, attaining under similar treatment eight and a half to nine feet; average produce six ears, six to eight inches long and twelve to sixteen rows to four plants; cob red; grain faintly marked with the same color, which no doubt is fully developed when pure; not possessing so highly the sweet flavor of the former it is not cultivated for general use.

"*Rice Corn.*"

This as well as the "Mandan" and "Nonpareil" is the prototype, excepting color, of the white varieties previously described and grown under similar treatment.

Blue Corn—"Nonpareil" and Flint.

Of these, familiarly known as "Pigeon Corn," we have nothing excepting color to especially notice. It is usually mixed on the ear with white grains, and unless grown as a matter of fancy is not cultivated.

Pure specimens I have rarely seen, and an attractive object in the horticultural department of the last exhibition, was an ear of pure blue sweet corn from Canada, which I have procured for seed, and another year will endeavor to obtain a supply for those who take other than a pecuniary interest in this variously formed and colored grain.

CATTLE ROOTS.

Beets.

The red and long yellow mangold wurzel, and white sugar, were grown on deep loomy soil, from seed sown on the twenty-ninth of May, in drills eighteen inches apart and the plants thinned one foot distant in the rows. The ground was prepared with a good supply of yard manure and deeply worked.

The superior growth on that portion, furnished with manure collected when feeding beets, has after trial the second year, satisfied me in regard to the good result attending this course of cultivation, a full account of which is to be found in your Transactions of last year.

Carrots.

These were grown on soil similar with the preceding, prepared in the same manner with perhaps rather more attention to its thorough pulverisation and the addition of a light dressing of wood ashes between the rows when the plants were about six inches high.

Of the five varieties cultivated, the "Belgian white" gave the largest yield. The "big orange" were of handsome growth and the return remunerative. It is a highly desirable and long established variety and by many esteemed superior.

The result of the Altringham was not satisfactory, notwithstanding, I had some good specimens, the growth was very uneven, the rows containing many inferior roots, and either I have expected too much from it, or else have been furnished with impure seed, which is probable, as this is the second season I have endeavored to grow it and have not yet had an approach to what

I am led to believe it capable of producing, and am aware of no cause why it should not thrive as well here as other varieties 1 have successfully cultivated.

The "large lemon colored" attained an important size and is beautiful in appearance, but regret on cutting, to find it watery, and doubt its remaining sound during winter, having never grown it before, I am not aware that this objectionable quality is characterestic.

The "blood red," though not extensively cultivated, I highly prize; it is capable of attaining a valuable size and have always found it to keep sound during winter. On cutting, the odor is much stronger than either of the preceding, and in the absence of an analysis, am inclined to the opinion that it contains properties more nutritive. It has, however, a propensity to run to seed and should not be sown until at least the last of May.

Turnips.

In consequence of the long continued absence of rain, my Rutabaga and yellow Aberdeen turnips, up to the first of October, made slow progress with the loss of many plants, and notwithstanding subsequent rains brought them forward, the roots at the close of the season were only tolerably well grown.

Regarding the cultivation of turnips for cattle use, I cannot view it with that importance many claim for it. I read with pleasure the interesting accounts from England of the attention paid to this crop and the various fertilisers employed to obtain the greater weight from the acre, the results showing that climate to be better adapted to its production. With us, in order to approach a corresponding growth, the seed should be sown in the month of May and the roots remain in the ground during October, when, in an unusually favorable season, large and solid roots may be obtained; but in ordinary seasons our summers are too severe. The plants become stinted, the roots hard, woody, and not unfrequently entirely destroyed. However valuable in Great Britain where its requirements are better met, our soil can be more profitably employed in the cultivation of mangold wurzel, and carrots, both of which are more nutritious and, with proper attention, will no doubt give as large a return as the best cultivated fields in Britain.

It appears to me that, with us, turnips should rank only as a secondary crop. They do comparatively well when sown after early potatoes, early Indian corn and other grain, thus keeping the land employed the entire season, but, in my opinion, should not be made a leading crop.

Turnip-rooted Cabbage.

Requiring rich soil, a long season to mature in, and its production being less valuable than either of the preceding root crops, it is perhaps as well that its cultivation in our climate should not be more extensive; but when grown under circumstances where the ground and labor employed is not of the first importance, it affords a good variety and I should prefer it to turnips when for such purpose. In order to have a good crop the ground has to be occupied the whole season. In the early stage of its growth it is used for culinary purposes, and in England, according to Mr. Bridgeman, "it is cultivated for feeding cows and sheep as well as for table use, and the bulbs often grow to upwards of twenty inches in circumference and weigh from ten to twelve pounds."

Garden Products.

Few things are more striking than the usually neglected condition of our farmer's gardens. Grounds artistically laid out and embellished with costly shrubbery, to say nothing of the artificial and expensive means employed in producing fruits and flowers that bloom and fruit only, without such care, in tropical climates, has, we are aware, however agreeably associated with country life, nothing to do with farming; but every farmer should have a small enclosure devoted to the cultivation of culinary vegetables beyond the coarser and few common-place varieties he is unnecessarily too generally confined; and with the view of stating the number of varieties produced in an abundant supply for a family of ordinary size at small cost from a piece of ground one hundred and twenty feet in length by seventy-five in breadth, have transcribed from my memorandum book the following, with a few remarks on some that, in this section, are not generally cultivated:

March 27*th*.—Sowed in double rows "Prince Albert," "Cedo nulli," "Early Emperor," "Hairbeard's Champion of England," and "Carter's Victoria" Peas.

The "Prince Albert" is the earliest variety with which I am acquainted, fruiting a few days in advance of the "Cedo nulli," both of which are desirable for early table use.

The "Early Emperor" comes in a week or ten days later, producing larger fruit, and yielding much more abundantly. It is the best of the early varieties for general cultivation.

The "Champion of England," justly celebrated for its many fine qualities, is for general use superior to all the others I have grown, moderately early, very prolific, full size, and excellent flavor, it will meet the expectations of any who may grow it. The vines, however, are lengthy, attaining in good ground, 7.8 feet, and should be well sodded, or else in garden cultivation, it will prove troublesome.

"Carter's Victoria" is a late variety, vine extensive, stout and branching. The seed should be sown six to eight inches apart in the drills. Fruit large, well-flavored, and good for a succeeding crop.

March 27*th*. Planted "Windsor Beans" between rows of peas, which are four feet apart.

However much prized in Great Britain, where it is the principal table bean, with us, in the possession of so many others better adapted to our climate, and so much superior, their cultivation, especially where ground is an object, had as well be omitted.

For sake of variety, however, and handsome appearance of their full and well-marked blossom, I grow a few, planted between the rows of peas with the view of protection from the sun, and in this way succeed in obtaining a fair return. Under ordinary circumstances its cultivation would not be remunerative, requiring a moist and temperate climate, our summers are ill adapted to its wants, the hot and not unfrequently dry weather at the fruiting season destroys the blossom before the bean is set, and total failure is too apt to be the result.

It is very hardy, admits of much earlier planting, and are ready for use in advance of those more extensively cultivated. Still, in consequence of the strong flavor, it is not generally liked.

March 28th. Put out lettuce plants, "Hardy green," from seed sown last October.

Requiring only a short season, it can be grown on ground intended for melons, egg-plants, &c. The curled varieties are preferable, but will not so well endure the winter. They should be forwarded in a moderate hot-bed, or sown as early in spring as the ground can be brought in condition. A supply can also be obtained for autumn use by sowing the seed in the early part of September.

The cop lettuce should be blanched before cut for use. It is then very tender and in high esteem.

March 31st—Sowed white and red solid Celery, also Celeriac.

In Scotland it is said the red celery is extensirely cultivated; in England, as with us, the white is most popular and the turnip rooted or celeriac but little known. In France and Germany it is freely grown, chiefly for the value of the bulb, the stalk is also suitable for table, possessing a peculiar sweetish flavor, and to a limited extent in private gardens is worthy of cultivation.

In preparing the trenches recent manure must be avoided. Select that which has passed through fermentation, and let it be thoroughly incorporated with the soil. Green manure will cause the plants to rot and too large a quantity of any kind is apt to produce similar results. I have derived great benefit from manure from the hog pen, and prize it highly for this plant. If the plants when about six inches high, are transplanted into a forwarding bed and there remain until time to put them out in the trenches, they will acquire strength and the product will be much finer.

March 31st—Sowed radish, early turnip, parsnip and salsify seed.

In order to have handsome roots of salsify or oyster plant, the ground should be deeply spaded, and thorougly pulverized; the plants early thinned six to eight inches apart, and the rows distant one foot and a half.

If sown early in spring it will be ready for use in September, and being hardy, will, like parsnips, remain in the ground without injury during winter. It admits of transplanting, but with me has never done so well as when allowed to remain in the permanent bed.

April 1st—Planted red, yellow and white silver skin onion sets.

The best fertilizer employed by me in growing onions is guano, resulting in handsomer bulbs and earlier maturity. For private use I prefer the white, and have found it to keep as well during winter as the other varieties.

April 2nd—Sowed long orange carrot seed, for borders.

No garden can appear well without finished margins to the walks, and in a kitchen garden I know of nothing better than carrots.

It is present early in spring, is uniform in growth, and its handsome cut leaves retains its thrifty appearance until late in the autumn, when the roots well repay the attention you have bestowed upon them.

April 4th—Put out sea kale roots procured in the vicinity of Philadelphia, where to a limited extent it is cultivated.

In this section it seems to be entirely unknown, and I have never observed it in the markets of New-York. A prevailing opinion exists that it will not thrive well in our climate, and also that it requires deep sandy soil to grow in, both of which I am inclined to the opinion, is incorrect; at all events those in my possession have done remarkably well, and next spring confidently expect to cut a moderate supply of this vegetable so much esteemed in various parts of Great Brittain, where it is extensively cultivated to supply the markets and also grown in most private gardens It comes in earlier than asparagus and said to be superior.

April 4th—Sowed Scorzonera.

This is another vegetable seemingly but little known in the United States. It produces a blackish root, in flavor not unlike the oyster plant, which, in form, it resembles, and like which it is hardy and requires a long season to grow in and similar treatment. The leaves, however, are much more abundant, and the plants should be thinned farther distant in the rows.

April 5th—Sowed Seakale seed with the view of obtaining a further supply of plants; two years at least from the seed is required before it can be cut for use. Sowed Parsley, Summer Savory, Sweet Majoram, Thyme, Globe Artichoke and Cardoon seed. Planted Melon seed in pots in hot-bed.

For weeding Melon plants in frames I have found very advantageous; you not only have the fruit earlier, but the plants, when put out, are in rough leaf and too far advanced to be destroyed by insects, which is too frequently their fate when sown in the open ground.

April 10th—Put out Cauliflower plants.

Notwithstanding all that is said in regard to the unsuitableness of our climate for this superior vegetable, if healthy plants from seed sown in September are put out early in April (and if provided with hand glasses early in March) in rich ground, and kept in a forward state by careful attention, seldom fail producing good heads or flowers in June. In the event of a dry season they should be freely supplied with water, and for private use so few are required, say twenty-five or thirty plants, the trouble is trifling and well repaid.

April 14th.—Sowed Nasturtium.

When not grown on a trellisse, the dwarf is preferable; the fruit is equally as good, and the vines not troublesome. In addition to the value of the berries, a row or two in a conspicuous position is ornamental.

April 24th.—Sowed Kidney Dwarf Beans and Endive.

The latter is now freely grown for market by the French gardeners in the city of New-York. It is a good substitute for Lettuce, and like the Coss variety, should be blanched before it is brought to table. If allowed to seed, it will attain the heighth of four feet, and produce handsome blue flowers.

April 28th.—Sowed Swiss chard, Sir John Sinclair, or green spinach Beet seed.

Cultivated for the value of its leaves, which supply the place of spinach, when that excellent vegetable cannot be procured. The leaves are about two feet long, very broad and tender, furnished with a wide groove like stem, purely white. By some it is called silver beet, in distinction from the golden and scarlet varieties which I have only met with at the recent exhibition, said to be natives of South America, and but lately introduced to the horticulture of the United States.

May 9th.—Sowed "British Queen" and "Monastery Marrow" Peas. Fruit of both very large, and good late varieties.

May 14th.—Sowed purple cape Brocoli Cauliflower, "fawn colored" savoy, and red cabbage in seed bed.

Planted Lima Beans. In order to have a longer continuance of this fine vegetable, without being too far advanced, I allow only two vines from the first planting to stand, and about three weeks afterwards plant again in the same hill, adding one or two more plants for later supply.

May 15th.—Sowed in open ground, large yellow, large red, smooth red, fig shaped red, and yellow cherry tomato seed.

May 17th.—Planted Garlic, off sets from fine bulbs, procured at the last Fair of the American Institute. Cultivation similar to that of Onions.

May 27th—Put out melons. Smooth red and large yellow tomato plants forwarded in hot bed.

As suggested last year in a communication to the American Agriculturist, I grew the above tomatos on an arched trellisse and found it attended with many advantages over the usual mode. The fruit from being freely exposed to the sun ripened earlier and is of handsomer growth, and being kept from the ground is not subjected to premature decay, which when grown in the ordinary way is too apt to be a cause of great waste.

May 30th—Planted Okra and Martynia.

As far north as the State of New-York the cultivation of okra is quite recent, or at most sparingly grown, and at present I am not aware that it is extensively used. In the Southern states it is common and freely used for culinary purposes. It is employed in the preparation of soups, and served up in the popular dish familiarly termed "Gumbaud."

Requiring a degree of heat seldom prevailing before the first of June, it is not safe to venture planting the seed earlier. All my attempts at an earlier period have resulted in loss and disappointment, but when deferred until warm and settled weather, have never known it to fail. Sown in drills and thinned twelve inches distant, with an additional hoeing, is all the cultivation required. In good ground the white variety will grow six to seven feet high. The green is comparatively dwarfish, and I observed in the Northern states most generally cultivated, but the capsules are more fibrous, coarser and not so well adapted to culinary use. The okra blossoms are large and handsome, and the plant is not inappropriate to ground devoted to ornamental purposes. Martynia, better known as the buffalo or unicorn plant, I have only grown as an object of curiosity, and am not prepared to speak of its merits as a culinary vegetable, and was not aware that it was used for such purpose until observing at the late fair a few specimens labeled "West India pickle." It is a stout growing plant, and when full grown is about two feet high, spreads fully four feet and produces its fruit abundantly, having when green the hooked horn entire, which when at advanced maturity splits forming two branches, from which circumstance we may suppose the above synonims have originated.

"Dedicated to Professor Martyn of Cambridge, a well known botanist of the last century."

(See Gray's Botany of the Northern United States.)

June 2*d*—Put out Egg Plants.

Being very tender, and not unfrequently destroyed by cold wet weather, they should not be put out until the weather is determined, and then if placed in rich ground, free from shade, they will, with little attention, fruit freely, and can be as easily procured as the most simple garden product, with the exception that, to have them early, the plants must be forwarded in a hot-bed. The early purple will, however, do very well from seed sown in the open ground in the month of May.

The analysis of the fruit, giving a large per centage of phosphoric acid, potash and soda, bone-dust and ashes, on most soils, can be safely employed in its cultivation, or ashes alone if the ground has been previously prepared with a good supply of yard manure; and I have observed the good effect of guano in forwarding the plants when their growth has been retarded by exposure to unsuitable weather. A few plants, incidentally procured last spring, gave yellow fruit; whether it is a distinct variety or not, I cannot say. During the early growth, the color is light purple, and it may be the violet egg plant, a variety much cultivated in France; assuming the yellow hue as it advances toward maturity. I have before occasionally had specimens of the same color, and viewed it as accidental; but in this instance, all the plants obtained under the same circumstances, produced similar fruit, and having no means of ascertaining where or by whom the plants were grown, have placed the seed in the hands of several growers, with the view of better ascertaining its true character.

June 18*th*.—Put out Pepper plants.

Plants forwarded in a hot-bed and put out in June, will with little attention, produce abundantly. The fruit is conspicuous, and if not required for use, a few plants is an embellishment to the kitchen garden.

July 5th.—Put out Brocoli plants between rows of onions which are at about maturity.

The purple cape being best adapted to our climate, it is most cultivated. The seed should be sown about the middle of May, and the plants put out early in July, to flower in October. If put out earlier, the heads, if they form at all soon run to seed, thus rendering them unfit for use. Where a small quantity only are required, it is best to raise the plants in pots, then they can be put out without checking their growth, and if attended to at proper intervals, a supply in ordinary seasons can be obtained during the months of October and November. Being an excellent substitute for cauliflower, and more likely to succeed, I grow it more freely, and rarely fail having an abundant supply for autumn use.

In this climate the flowering of the white Brocoli is more uncertain, and though well to try a few, it is not safe to depend upon it for the main supply.

Like cauliflower, the varieties of this species of brassica, require rich soil, and in other respects similar treatment.

Brocoli and onions I grow on the same ground by putting out the plants in July, the same as if the ground were unoccupied, and before they spread to any important extent, the onions are ready to be taken off.

July 9th. Put out Globe Artichokes; put out cardoons in trenches with the view of convenience for blanching.

For the former two years from the seed is required before the plants produce their globular heads, which is the part used. The seed should be sown early in spring, and the plants, when six to eight inches high, transplanted into a permanent bed, in rows five feet apart, and the plants three feet distant, when with proper attention they will last for several years, producing their fruit annually.

Like the former, the Cardoon artichoke is freely grown in France, where it is used chiefly in the preparation of soups.

In good soil, it will grow four to five feet high, and if allowed, the tops will spread to a circle of five feet. As it progresses in growth it should be earthed up for blanching, and in order to have for such purpose a sufficient supply of earth the plants should be at least four feet distant every way. Stems stout, leaves lanceolate, cut; lower surface silver white, upper, dark green; their margins furnished with sharp thorns, and in appearance it is not unlike the thistle.

As a variety it is attractive, but with us not much esteemed for culinary purposes, and its cultivation is limited.

July 18*th* Sowed Esculenta (turnip rooted cabbage below ground or French turnip,) Red top, long white Tankard, yellow Malta and Swan's egg turnip seed.

July 19*th*—Put out Celery in trenches, in ground on which early peas were grown.

Sowed Endive, Silesia and Coss Lettuce for autumn use.

Aug. 5*th*—Sowed Peas. Although the flavor is not so fine as in spring they are nevertheless desirable, and it is as well to sow a few for autumn use.

Sept. 17th. Sowed Broad-leaved Spinach," and "Hardy Green Lettuce," to stand out during winter.

Very respectfully,

JACOB P. GIRAUD, JR.

Bergen, N. J., Dec. 3, 1851.

To JAMES R. SMITH, ESQ.,

Ch'n Prem'n Com. Fair of American Institute:

SIR:—In compliance with your suggestion at the time I informed you that I should hereafter withdraw from competition in the cook stove departments of future Fairs, I proceed to lay my case before the premium committee, and through them before the American Institute.

Anthracite coal was first brought to market with the view of being introduced as fuel in the year 1820, during that year 365 tons of Lehigh coal was mined, it was not until 1825, that the

Schuylkill mines were worked for that purpose, in that year about 6,500 tons of coal including Lehigh were brought to market, some of which reached the city of New-York. The mining operations for 1851, will exceed 3,000,000 tons.

With the view of showing how and in what way the doings and interests of the subscriber have been identified with the coal mines of Pennsylvania, and the introduction of their coal into use, particularly for the *mass*, the *many* he refers to the following extract from a deposition made by himself in the year 1847, in certain matters then pending before the Hon. Secretary of State of the United States. And also to the report from the examiner and commissioner of patents, confirmed by the Hon. James Buchanan, to the effect that the invention of the subscriber produced a *distinct era* in *fuel saving*.

City and County of New-York, *ss*:

Jordan L. Mott, applicant &c., being duly sworn, doth depose and say that soon after the anthracite coal was brought to the city of New-York, he commenced a series of experiments for the purpose of devising some mode by which it might be used for domestic purposes; the apparatus then employed for burning bituminous coal or wood not being adapted to this new fuel; that his first experiments were with the large sized coal, which he soon abandoned and confined them to the small sized nut coal, which was accumulating in large quantities in the yards, and at the mines, was but little or no value, in most cases given away.

To contrive an apparatus in which the *poor could use this seemingly worthless coal was the chief object of this deponent's experiments*, which he continued with varied success for the period of five or six years, during which time he tried almost every conceivable form of fire-place or grate.

One serious objection to the use of large coal was the great length of time required to make an available fire. In the winter of 1829, this deponent contrived a stove in which he could make a fire with small coal in from five to ten minutes, using as kindling wood a small white wood segar box.

At this period it was a matter of great curiosity with the public to see a hard coal fire kindled with so small a quantity of wood. "From this stove this deponent discovered the importance of burning coal in *thin layers* which led to the theory, that to *obtain the maximum amount* of *heat from anthracite coal*, the *depth of the stratum should be governed by the size of the lumps and the amount of air used in its combustion;* that to secure the most perfect combustion in a stove or furnace constructed with an ordinary draft, if the pea sized coal, the depth of the stratum should be from two or three inches; for nut sized coal from four to five inches; for egg sized, seven to eight inches; increasing the depth of stratum as larger coal is used; with these depths the gaseous products will be carbonic acid, the result of a perfect combustion, with a much increased depth the gaseous products will be carbonic oxyde, a combnstible gas, which flames with renewed oxygen, as witnessed by the blue flame at the top of the smoke pipe of nearly all the steamers that use anthracite coal, 'wasting a large amount of heat.' This deponent found that in burning small coal in thin *horizontal* layers it would soon cool out, leaving the grate covered with unignited coal, the outside burnt to a cinder, the inside but little affected by combustion. This being at the expense of a great waste of fuel, time and labor, he tried an inclined grate with better success, but not what he thought was requisite to induce the public to relinquish their long cherished wood fire for a fuel of which they could know but little."

"During the winter of 1831 and 32, he experimented witl various modifications upon the stove for which he (subsequently) applied for and obtained letters patent of the United States." "This may be classed among the *compound stoves*; it having a double furnace, a deep, and a thin fire, an upper or close stove, a lower or open stove. By this arrangement all the advantages of burning coal in thin layers are preserved without the constant fear of the coal burning or cooling out. The crude coal being placed in the front chamber, out of the line of draft becomes heated and gradually slides into the line of draft as combustion progresses. The most perfect combustion being at the thin part of the fire at the forward part of the grate; more air passing the front and upper part of the grate in consequence of having a less depth of coal to pass through; air like water passing where there is the least to obstruct. The coal as it gradually slides from the front is less compact and thus facilitates the draft. The draft through the bottom and the deep part of the grate is necessarily sluggish. The deep grate serves as a reservoir for the coal that has undergone nearly complete combustion, as also for the ashes, clinker, slate and other foreign matter, affording sufficient depth to prevent the fire cooling out, *an evil that cannot be avoided with a thin fire of a uniform depth "either horizontal or inclined."*

"When this deponent had perfected and secured his invention, he had great difficulty to introduce it. He had to contend with the prejudices of the public against a new article. As he was not a practical mechanic he had also to contend with superior skill and economy of manufacture. He offered the invention to some of the trade at their own or in fact without price, for a few years, but being unwilling to incur the expense of introducing a new article, or not appreciating its utilities, they declined to accept it upon any terms." "Many persons could not be persuaded that a small quantity, of coal would afford more available heat than a larger quantity, whatever might be the construction of the furnace. Others would not use small coal; as late as 1835, a lady when informed by this deponent that she must use nut coal, refused to purchase his stove, saying that she would not have a load dumped at her door by day light, *as it was a cheap coal fit only for the poor*; at that date it was selling at about half the price of broken coal," &c., &c.

Sworn to on the 24th of November,
1847, before

ALEXANDER WATSON, *Commissioner of Deeds.*

Again: "Anthracite coal has been known for centuries; in Wales there is said to be a bed 7 to 8 miles in width and from 70 to 80 miles in length, and yet it is not used in England for domestic purposes; they suffer all the annoyance of the smoke and dust of bituminous coal for no other reason than their ignorance of the immense value of the Anthracite and the want of a proper apparatus for its use; that their anthracite is equal in quality to the anthracites of this country for domestic purposes, can and will cheerfully be proved at the store of the subscriber should your committee desire proof, at any time that will suit their convenience, as he is in possession of a parcel of Welch anthracite.

Letter of the Commissioner of patents to the Secretary of State of the United States.

Patent Office, *May* 5, 1835.

Sir—In reply to your letter of the 3d inst., requesting my opinion whether or no the stove invented by Jordan L. Mott, for burning refuse anthracite coal is useful and important, I have the honor to state, that in my judgment it is *both* useful and important. In my opinion the invention involves a beautiful application of philosphical principles to the purpose for which it was designed, and was at the time it was made new, and has since proved by practical experiments to be of great utility.

I submitted the matter of your inquiries to the examiner who has charge of that class of inventions, and he concurs with me in the opinion above expressed, as you will perceive by his report to me herewith enclosed.

I have the honor to be,
with great respect, your ob't serv't,
(Signed) EDMUND BURKE.

Report of the Principal Examiner of Patents.

Patent Office, *May* 5, 1848.

Sir—In compliance with your request for my opinion as to the utility and importance of the stove invented by Jordan L. Mott, for burning small coal, I have the honor to state that I have for several years been well acquainted with this invention, and regarded it as highly *useful* and *important*. It appears to stand quite prominent among the great collection of improvements in stoves, as *making a distinct era in fuel-saving*. To the best of my belief and knowledge, the kinds of coal for which this stove was contrived, were considered useless before this invention. Respectfully submitted.

(Signed) CHAS. G. PAIGE,
Examiner of Patents.

Hon. Edmund Burke, *Commissioner of Patents.*

Endorsement of the Hon. Secretary of State.

I concur entirely in the foregoing report of the Commissioner of patents, in regard to the great utility and importance of Mr. Jordan L. Mott's invention for burning refuse anthracite coal.

(Signed) JAMES BUCHANAN.

Washington May 8, 1848.

The evidence confirming that of the subscriber and which led to the report from the Secretary of State, were affidavits kindly furnished by Prof., Renwick, Dr. James R. Chilton, Gen. Thomas W. Harvey, and other gentlemen of scientific and practical knowledge including those from stove dealers in Boston, Philadelphia, Albany, New-York, and the person who made his first patterns.

Prof. Renwick in his affidavit says: 1st. "Mr. Mott, so far as I am able to learn was the first person who successfully used as fuel, anthracite coal broken into small fragments" again,

2d. "Mr. Mott's apparatus for burning coal of this description is not only the first in point of date, but is as far as my observations have reached, the *best* of all those used for the purpose."

Doct. Chilton, after stating that he had "assisted in making a series of practical experiments to test the value of the improvement," says. "By its peculiar construction no doubt that a greater amount of available heat can be obtained for domestic uses from a given weight of coal, than by any other arrangement with which I am acquainted."

The Compound Furnace referred to in the foregoing extract, is the same as that embodied and combined with other most important practical improvements for the application and economy of heat in the stove made by the undersigned called the "Invincible," and entered on the books and catalolgue of the late Fair of the "American Institute as number *one*."

It is the same furnace to which the American Institute awarded a discretionary premium by the managers of the fair held at Masonic Hall in 1833, in the following words:

To Jordan L. Mott, for a "Self supply Coal Stove, simple in construction, of good appearance and burns well." It is the same furnace combined with other improvements which has, year after year since 1833 won the awards of the Institute.

If memory serves I have repeatedly in conversation with you stated that if I were to make a stove to be used only in my kitchen or by those who had the mind to manage a complicated affair, that it would be different from and necessarily more costly than one for the many. My object has ever been to make a stove that will meet the wants of the *mass*. In getting up a new set of patterns, in all cases I aim to make the stove, not only economical and efficient, but so simple in management, that the girl who arrives from Europe one day may use it the next.

More than 25 years have passed since 1 commenced experimenting for the express purpose of constructing some mode by which anthracite coal could be used by the *mass*; 10 years of which period I continued my mercantile business, depending upon the profits of that to aid in introducing a most valuable fuel. When I commenced the stove business I was looked upon by dealers of that day, as an interloper, I was so called, but few of them would commune with or deal with me; for the past 7 years I have been the oldest wholesale manufacturer in the city.

For nineteen years I have been a competitor at the Fairs of the American Institute; and of the many persons who have officiated as judges, scientific or practical, who have been changed from time to time as the managing committee have changed, all, all, have awarded credit to the stoves of my manufacture, whilst others who have had their day have abandoned or ceased to manufacture theirs. My invention has stood the test of time every year adding new claims to its utility and importance.

Two of the judges of the late Fair were dealers in stoves, not those of my make, as I could not sell to them without interfering with those to whom I confine sales, and yet their report under these circumstances is more flattering to me than many of their predecessors. They say of my stove number *one* on the catalogue. "This stove is judged to be the most useful for the *great mass of the people* whose means will not enable them to obtain No. 358."

With great respect,
Yours,
JORDAN L. MOTT.

New-York, Nov. 26, 1851.

GEN. A. CHANDLER,
Cor. Sec. American Institute, New-York.

Dear Sir—In submitting to your consideration the following facts and theories which as a member of the press have passed under my revision, it may be necessary to state my reasons for laying the same before you.

Although I am no socialist, except as regards Literature and the Arts and Sciences—in which I should rejoice to see every civilized nation in existence closely united in the fraternizing bonds of interchange and the communion of knowledge—the common capital of all who desire an interest in the same—I presume to consider that no man has a moral right to keep to himself the knowledge which he may have acquired; the thoughts and ideas produced by study, or resulting from observation and experience. In order, however, that these thoughts may be rendered available to the human family at large, it is necessary that they should be submitted to analysis, and the best of all analyses is the continuous and successive *experiments* of the different laborers in science and the *comparison* of their various processes through the medium of friendly interchange and communication. This is assuredly a desideratum for all who are engaged in the labors of art, science or literature; and it should be the object of every institution founded on the broad and general principle for rendering men wiser and consequently happier, to offer to every thinking man the readiest medium for this communication with his fellow laborers in scientific inquiry.

I may be permitted here, to advert to the noble example afforded by the New-York AMERICAN INSTITUTE, which has ever evinced the most generous philanthropy in their efforts for human happiness and advancement. If it should be inquired by the envious what has the American Institute of New-York done more than other institutions? I would reply—and I think consistently—look around and tell me what they have *not* done! Sir, the "Farmer's Club," the meetings of which are held within the walls of the American Institute is the parent of every similar union in the United States! The advantages offered to agriculturists, &c. by the professional communications and exchanges made at these meetings are most honorable to the Institute and must result in the highest practical advantages to the people of this great country!

Sir, there is an imperative necessity for an interchange of this nature, which I trust you will readily admit when we reflect for one moment how much has been lost to mankind in every branch of science by this unfortunate neglect and inobservance. I remember that the late William Dunlop, of the New-York Drug Mills,—with whom I was engaged when I first came to this country—and who was always experimenting in some way or another, discovered a process for rendering steel particularly, I may say adamantinely hard! He died in 1833, and the secret of his discovery was lost to mankind. The principle he employed was of course contraction, but further, as to the particular method he employed, we know not! This is an instance which came under my own observation; but how many other lights of science of which we have neither record or conception, have been obliterated by this—I cannot call it less than idle neglect of the discoverer.

A writer in a late work of distinguished excellence, has feelingly lamented that the men of science of the present day are so deficient in earnestness, and that they have satisfied themselves with the mere statement of facts, without pursuing the inquiry to what additional powers these facts may be regarded tributary; that profession supplies the place of performance, and that words have usurped the stern dignity of thought! This sir, is a sweeping accusation, but let us inquire if it is not founded on truth! We boast of the present as a religious age, and yet we have in too many instances lost sight of the divine power in nature and thè infinity which belongs to it; although it is presented to us in every natural formation, and set forth in every combination which we make in our laboratories.

The fulfilment of the duties thus virtually imposed upon us for the acquisition and diffusion of knowledge, require an unceasing industry in seizing on the facts and circumstances at the moment. This immediate attention is further implied in the portrait which the ancients have left us of opportunity, who is painted with a profusion of locks over his forehead, but with not one solitary tress behind! It is left to us sir, to supply the moral.

"I pity the man," say Sterne, "who can travel from Dan to Beersheba, and cry it is all barren!" Nor was the satirist unjust in this observation, for it would be difficult to fix upon any man, whatever his grade in education or society, but who must from repeated opportunities of observation have possessed himself of some points of knowledge worth imparting as new, or not generally known. It is the determination to record the facts that we have gathered in our progress through life, the waifs and strays floating on the current of our existence, which every man is bound in the common feelings of humanity to secure and contribute to the general stock of information; and which, though not perhaps immediately available for practical purposes, should nevertheless be recorded, for the hour will certainly arrive, and generally when we are in least expectation of it, when it must necessarily be observed in principle! The Chinese have a maxim, the gist of which it would be as well for some who pride themselves as more enlightened to remember; "That something is learned, that is by the thinking and considerate, every time a book is opened!" and another sentiment of that proverbial nation reads, "with time and patience the mulberry leaf becomes satin! The same people call pen, ink, paper, and marble, as the medium for recording their thoughts and observations, *Pau-tsee*, i. e. the four precious things! Gentlemen the Chinese are much wiser in their philosophy than the western world has been in the habit of supposing.

Our industry, however, must have an end and object in its design, or we shall vitiate the results we desire to establish; and though we were not to imagine every difficulty is a lion in our path, at the same time it may be as well to remember that, in the Bodleian collection of manuscript letters, we have an instance of an enthusiast following a butterfly for nine miles before he could secure his prize. Now, unless this was a very rare specimen of entomology, or one whose existence was either unknown or doubted, this "pursuit of science under difficulties" was a mere wasting of our energies, and a diversion from more useful purposes.

Again, Sir, permit me to reiterate that the acquisition and diffusion of knowledge is imperative on every man; and when we consider the infinite variety of tastes and inclinations which accompany humanity, the truth flashes upon us as self-evident, that there is no thread in the great tapestry of nature in which the process of induction, the art of reasoning from particulars to generalities, may not be employed with honor, interest and profit. In fact, in our aspirations after elementary principles, we must, from the continuance and stedfastness of our application, arrive at results, the permanent value of which we could not, at the moment, have possibly dreamt of or imagined.

It is the mere principle of selfishness to suppose that we have done all that it is possible one can do; nay, it is the essence of irreligion to indulge any such imaginings; for if we look into the works of creation with the proper spirit of inquiry, we shall there learn the great truth that the Divine Creator, so far from expending his creative power on this wonderful world, has left us evidence that numberless new forms of matter could be produced from the same elements by any expression of his will. Now this is a remarkable truth, and one on which we should do well to ponder before we attempt to influence our minds with the delusion that we have done all that, in our sphere, it is incumbent on us to do in the acquisition and diffusion of knowledge. Such a belief is a contracted prejudice; and, sir, we have no moral right to make ourselves the prisoners of prejudice.

Of the necessity for this constant interchange of thoughts and acquirements in science, and the results of our different experiments, it may be stated here, that the first public announcement of the cellular structure of plants, which has only lately (1849) been thoroughly examined, was made by Robert Hooke in the early part of the 17th century—a fact that is at once both curious and impressive, as affording an instance of the length of time that a great scientific truth may lie dormant for want of detailed observation.

Dr. Edward Clarke, the celebrated traveler and improver of the blow-pipe, was a man of such untiring industry in the pursuit of scientific knowledge, that, on a friend's hinting to him one day that he "had too many irons in the fire," he replied that such application was imperative for success in any study, and that a man, so far from placing the poker into the fire, would do well to put the shovel and tongs there also; "and, sir," continued he, if there is any room left, put the coal scuttle over all."

It must not, however, be supposed that this continued industry is to absorb all the finer feelings of our nature. To Dr. Clarke's imperishable honor, he was to his aged mother the most loving and affectionate of sons. The Mohammedans have a saying that we can have but one mother; Dr. Clarke, however, has shown us by his example that he had two affections—his mother and science.

But, sir, we will come a little nearer home, and bring forward on our canvas the two great apostles of industry of this country—the lamented Audubon and Elihu Burritt. I am confident, sir, you will support me in the opinion that the unwearied perseverance of these two great men has covered the whole world of idleness with "shame and confusion of face."

You may possibly consider me an enthusiast in these remarks; I have, however, good and sound authority for my opinion. Dr. Beck, in one of his clinical lectures, observed to his pupils one day that, without enthusiasm in any and every pursuit, we must fail in our efforts for any favorable results.

And now, sir, with your permission we will, for a few moments, glance at a few notices which I have gathered in my desultory course of reading.

Apples.—Of this great staple fruit of our country, I find some varieties mentioned by Malte Brun which may, perhaps, merit our attention. On the subject of the different species grown in Central Russia, he notices that they were brought from Astrachan, Persia, and other sections of the eastern country. The European kinds are very rare. The apple of *Kircusk*, though very large, is agreeable to the taste, and some of them weigh from three to four pounds. The *transparent apple*, to which I would particularly call your attention, thrives in the governments of Vladimer and Moscow; it is said to have been imported from China, though many consider it indigenous to the Crimea. This apple is so permeable to light that the seeds are distinctly seen through it.

It is not a little extraordinary that the gardiners of Rostorn, in the government of Jaroslau, are superior to any in Europe. Though unaided by the lights of science, and without resources, contending against a rigorous climate, they supply the entire cities of St. Petersburgh and Moscow with every variety of early vegetable. It is probable, however, that these industrious men are the descendants of a foreign colony; as the real Russian gives himself but little trouble about such pursuits.

Scottish Orchards.—Cobbett, speaking of the Scottish orchards, describes them as sources of prodigious profit. All the spare ground is planted with gooseberries, currants and, in some situations, with raspberries, the whole of which are kept entirely clear from weeds and spurs that the air may have thorough access to the fruit and branches, so that the berries are kept from what we call *sweat* or *scurf*. This is worthy of remembrance. These orchards frequently realize from £80 to £100 sterling per acre; and Mr. Gavin, of Hamilton, told Cobbett that his orchard, less in extent than an English acre, yielded him in good seasons £80 clear profit. Proprietors frequently sell by auction the fruit of ten or a dozen acres at prices closely approaching £100 per acre. The French champaign *growers* (!) are notorious for their commercial visits to the pear countries in England, and particularly Hereford, when they sweep off all they can purchase for the use of their wine factories in their native countries.

We have some splendid apples in America; but I fear we do not experiment sufficiently in our grafts and flower buds, or we should surely root out every poor and unprofitable apple in the country. The advantage of these continual experiments was shown at the Guernsey Fruit Exhibition last fall (1847) where a *Chaumontel pear* was presented from a graft on a quince stock, weighing two pounds four ounces and-a-half avoirdupois. No artificial means had been employed to increase the weight of the fruit, of which there was in addition a fair crop on the tree.

With respect to these experiments in grafting, particularly in hybrids, we may refer at once to the successful results of the strawberry on the Eglantine, recorded, if I mistake not, in the reports of your institution; and I am induced to believe that vast improvements can yet be made in our *peach orchards*, both in size and quality, by a continued series of crosses and experiments on hardy stocks of plums, apples, pears, and quinces of an acid quality; this I believe to be an essential observance in order to prevent deterioration in flavor.

I have the pleasure of stating that a new *Nectarine* has recently been introduced into England from Syria. It is called the Stanwick Nectarine, and is recommended in almost extravagant terms. It is pronounced by the best fruit growers, in excellence as far beyond all other nectarines, as a green-gage is beyond all other plums. The flesh is white, exceedingly tender, juicy, rich and sugary, and without the slightest trace of the prussic-acid flavor.

Melons.—The next I find on my list is the melon, a noble fruit, could we but add an acid to the flavor; and I do not see why we could not accomplish even this, by mixing the pollen of different varieties, or even of extraneous fruits. The melon is especially rejected by some on account of its sickly sweetness; now a process by which this fruit could be acidulated would remove every objection even of the most fastidious.

On the subject of frame culture I may mention, that white glass is found highly disadvantageous as admitting the scorching rays of the sun; this is now remedied by employing green glass which admits the luminous and chemical effects necessary for vegetation, and excludes the inconvenience complained of.

Tomato.—The same results from acidulation could probably be effected by experiments on the tomato, by which this fruit could be advanced from our sauces &c., to the dessert. As a vegetable accompaniment nothing can be more delicious, but by the addition of a sacharine acid, the merits of the fruit would be greatly increased. At any rate the experiment is worth a trial.

Blackberry.—The blackberry comes under the same category for improvement. We have no conception here of the vast size which the berries of Normandy bear in comparison with our own. It appears that the plants of that country assume the form of large bushes growing wild under the shelter of the lofty forest-trees. The fruit from these bushes is as large as fine mulberries, and of an exceedingly delicious flavor; valuable as a medicinal syrup for sore throat and for dysentery. It is supposed that the increased size of the Norman berry is owing to the absorption of the superabundant moisture by the overhanging foliage of the forest trees. In England high banks and dry soils appear best adapted to the perfection of this fruit. Possibly a graft on the mulberry or plum would produce the result desired.

Raspberry.—Of the raspberry I would suggest the inquiry whether we have given this fruit all the attention it deserves; from its general size and appearance I am inclined to think we have not. Many years ago I read that the ashes of common seaweed produce great effects with regard to size; and some accounts lately published speak of the valuable results produced by the application of powdered charcoal.

Potatoes.—With regard to seaweed as a manure for potatoes, it appears from some experiments made at Penzance, in Cornwall, that this application produced an abundant crop, and the potatoes when dressed were one ball of meal, with a taste like new flour.

Butter-nut Sugar.—An experiment I find by a communication to the American Agriculturist for last month, (Aug.,) has been made to test the sacharine qualities of the butter-nut sap. The writer states that late in the spring he sapped several trees standing in an open field, and obtained from each tree about four gallons of sap, which on evaporation yielded 5 oz., grained sugar to the gallon, of a peculiar honey-like flavor. It was thought to make better molasses than any other kind the writer was acquainted with. It required to be well strained from the jelly-flakes when very dilute. This sugar did not partake of the medicinal properties of the bark; and the amount of sap it was supposed would be equal to those of any maple of same size and soil. The gathering it was stated, would furnish employment for the early spring, before the commencement of the regular farm labor.

Poultry.—My next memorandum refers to poultry, of which I learn that Mr. Giles, of Providence, R. I., has lately imported some very fine specimens, from the aviary of Messrs. Baker, Piccadilly, London. The prices it appears were for Malay roosters, $3.25 to $8.75 each; hens $2.50 to $3.75: Cochin China roosters, $10; hens, $5 to $7.50: speckled Dorking roosters, $5; hens, $1.75 to $2: Spanish roosters, $6.25 to $7.50; hens, $2.50 to $3: Sussex roosters, $5; hens, $1.75: golden and silver Pheasants, each, per pair, $17.50, and English Pheasants $6 to $7.50 per pair.

Steam Boilers.—From poultry to machinery is somewhat of a bound, but sir I have no alternative. To prevent corrosion in steam boilers, it was proposed at the annual meeting of the Cornwall Polytechnic Society, to pour a small quantity of coal tar into the water, just before the steam is to "get up." The experimenter (Mr. Williams, of Helstone,) stated, that this substance, when thrown into boiling water, parts with its volatile constituents, and its carbon is deposited upon all sides of the boiler with singular uniformity, adhering with great firmness to the iron plates by the peculiar action of the force, which appears to condense fluid matter on solid surfaces; thus forming a kind of graphite coating, which most effectually protected the iron from all corrosion.

One more suggestion, and I shall conclude my notices in this communication, already I fear too long an intrusion on your patience.

Paper.—The refuse of the British cotton and flax mills, which has generally been rejected, as useless from its absorption of grease &c., is now by a treatment of alkaline solution, thoroughly cleansed, and produces a very excellent and cheap writing paper.

I trust, sir, I have not in my enthusiasm been too intrusive in the facts and speculations I have had the honor of laying before you. It will readily be admitted that every well intentioned person should be desirous of being considered a useful citizen, and the readiest method we can adopt to prove the sincerity of our profession, is to exert all the energies we possess to render our fellow beings wiser, and consequently better fitted to enjoy the happiness we are thus enabled to confer on them. We can take the very best authority for our support of this opinion, when we remember that the angels themselves, though the highest created intelligences are continually employed in the service of their Great Creator for the beneficent supply and protection of his creatures.

A poet of North Carolina, in a late issue, makes this inquiry in one of his pieces—

"When was genius e'er gregarious?"

Now, sir, though I greatly admire poetry, I must at the same time express my conviction that there is too frequently a great gulf between poetry and gospel, and as regards the confluence of genius in that Institution, one of whose leading officers I have now the honor of addressing, I feel confident that we have the power, wholly and absolutely, to reverse this gentleman's assertion; every man must be something in life, now let us determine to be working genii, fact collecting, fact recording genii; a very hive of busy genii, and in a very little period of time we shall be enabled to show to the world that however sound our poet may be in syntax, he has failed most woefully in fact!

In conclusion, I would say, adopting the sentiments of one of the most extraordinarily gifted writers of the present day, "As we thus read lessons from the great book of visable matter, in its infinitely varied characters, let us not neglect that other Book which has been given to man to study his progress through life, to secure his happiness on earth, and to enable him to die in the hope of an *interchange* of pure intelligence!"

I beg to subscribe,
My dear sir,
With must respect,
Your very ob't serv't,
E. G. LANGDON,

New-York, Sept. 2, 1851. 545 *Hudson-st.*

OSWEGO COUNTY.

To the officers of the American Institute,

Gentlemen: In compliance with your invitation, I attended as a delegate from the Agricultural Society of Oswego county, your 24th Annual Exhibition, held in October last. It was to me a pleasure to be present as a guest at the National Banquet which you had prepared, and to which you invited, not only the family of New-York, but the numerous family of the entire United States. On looking round, it appeared to me that every branch had responded, even distant California was there with specimens of her mineral and vegetable treasures, and all contributed something, so that the entertainment was varied and bountiful, each particular taste must have been suited, and I trust all received pleasure and profit therefrom.

I came as the representative of one of the youngest sisters of the family of New-York; who, though she has barely passed her minority, desires to be received into your society and become a competitor for those benefits which you are so liberally dispensing through all our wide and extended country. We cannot, like the balmy regions of the south, present you with the spices, nor with the luxuriant fruits of the tropics. We are from the extreme north of our vast possessions, where we have a hyperborean climate to contend with when compared with the localities of a large proportion of our brethren. Added to the disadvantages of climate; our county was not blessed with a particularly inviting *face*, which operates disadvantageously in regard to early engagements. Although the general aspect of our county, in a state of nature, was forbidding, yet through the persevering industry of those whose lot was cast in this region, they have so far overcome natural impediments, that many parts of it have become desirable as places of residence, affording not only an equal share of the comforts of life, but a fair share of the luxuries also. We feel bound to make the best we can of our locality, and improve the talents committed to our charge by a wise Providence.

I am delegated to represent the agricultural and horticultural interests of our county; but it affords me gratification to find that the progress of arts, in it, are favorably represented here. Our starch and flour occupy conspicuous niches in your exhibition. Of these two articles we manufacture more than four million of dollars in value annually; and we also produce respectable quantities of butter and cheese for the eastern markets, together with beef, pork, wool, and many other farm productions. From our orchards we are now sending and are prepared to send to this market *fifty thousand barrels* of apples of the finest quality produced in the United States.

Situated as Oswego county is between 43° and 44° of north latitude, on a parallel with the southern part of Maine, an inference might be drawn that the climate was too frigid for the successful cultivation of the finer and more delicate fruits of the middle States; but such is not the case. Bordering as we do upon Lake Ontario, whose waters never freeze, the influence upon the surrounding atmosphere is such that the temperature never falls more than 8° below zero, hence the cherry, apricot, nectarine, and peach, thrive and perfect their fruits as well, or better, than in the New England States.

The commercial advantages of Oswego county are already commanding considerable attention. In addition to our domestic trade, which bears a large proportion to that of all the lakes, we have an increasing foreign trade with the Canadas, which merits, not only a fostering care from the State of New-York, on account of the tolls paid to her canals, but the freights thus secured to American bottoms on the Atlantic, and the revenue accruing to the United States at the port of Oswego, demand a corresponding action on the part of the general government. The foreign trade of the port of Oswego, which four or five years since did not afford sufficient revenue to pay the expenses of the collector's office, has increased the present season to over five hundred thousand dollars in duties paid on foreign articles, with a fair prospect that it may hereafter be counted by millions, should our government respond to the wishes of our Canadian neighbors. There is no port on our northern frontier that would command as great a proportion of this foreign trade as Oswego.

The waters of Oswego county, for hydraulic purposes, are not surpassed by those of any other county in the State of New-York. On the north, traversing the whole width of the county runs Salmon river, with a heavy body of water, passing over a rocky bottom with rocky bank and a sufficient fall to drive the machinery for a nation. Near the western part of the county we have Oswego river, the pride of western New-York for hydraulic purposes. This river, which receives the drainage of some twelve of our western counties, and, as if to economise its expenditures, the water is first entered into as many lakes which serve as so many equalizing reservoirs, sending their steady supply at all times, unfrozen during winter, clear and limpid during summer, unobstructed by ice floods in spring time, nor swelled to any great extent by the early or late rains of the season, and bidding defiance to the droughts of summer, flows on in one unceasing current, sufficient for driving all the machinery that this part of the State may require for generations to come.

For inland commerce and transportation, Oswego county is not behind the age. We have two railroads traversing the county from north to south, and it is said we have more plank roads traversing in various directions than any other county in the State. Thus you see, that although we have not thought proper till now to "*come out*," we hope through your kindness to be somewhat extensively introduced to the world.

Yours respectfully,

N. GOODSELL.

DRAINING TILE.

A. Chandler, *Correspondiug Secretary of the Am. Institute :*

Sir—I have to acknowledge the receipt of a "Silver Medal," awarded by the "American Institute" for the best "draining tiles," and at the same time beg to express my gratification at their having received the approval of your honorable society, which gives me hope that agriculturists will eventually see the great advantage to be derived from draining with "tile," in preference to any other method hitherto in use.

The subject of draining has for many years occupied the attention of our farmers. The late Judge Buel, spoke strongly in its favor, and it has been since frequently urged by our most scientific men ; but where a large amount was frequently expended in stone draining, considerable disappointment was experienced; for, by the second or third year, when the benefit of draining was beginning to develope itself, the drains would become choked and useless through the ravages of vermin.

This has been one reason why "*thorough draining*" has not been more generally adopted in the United States; but the introduction of "drain tiles" offers an effectual remedy to this difficulty. I allude more particularly to the round or pipe tile, and the horseshoe with sole attached. The simple horseshoe laid with a broad sole, may last a little longer than the stone drain, but the board rots, and you are again at the mercy of whatever vermin may frequent the locality.

There are advantages in draining with "tile," which should not be overlooked, first, they cost much less, as it is impossible, even with stones at hand, to construct a foot of drain for *one cent*, which is the cost of an excellent sized tile for that purpose, and as they can be carried to the drain on a hand-barrow, it prevents the ground being cut up with waggons. Then, it is unnecessary to dig so wide a trench, which again saves cost; and *principally*, the durability of the drains.

Great care should be taken to insure that the tiles are properly hardened in burning. We now test all that are sent from the factory. In cases of doubt, dip the tile several times in water, and allow them to dry; if they stand this, they may be laid with safety.

With regard to the *depth* at which the drain should be laid, opinions are divided. If the top thirty inches of soil can be cleared of superfluous water, the crops will be safe, but *three feet* may be recommended as a good average depth, and the ordinary drains, leading to the main drain, should be from fifteen to thirty feet apart. The main drain should be dug first, and deeper, and larger than the others, (for which we have tiles up to 6 inches diameter,) allowing the others to slope into it at the least possible inclination, and the main drain must also slope to the outlet, where the water may be made available for cattle, artificial ponds, or ornamental purposes. In digging the trench, the top soil should be laid on one side, the subsoil on the other, so that in returning it, there may be no inequality of the land. The trench should be as narrow as it is possible for a man to work in. Lay the tiles moderately close together, and over each joint place a sod, which prevents any dirt getting into the drain, then return the soil and the labor is completed.

It is an error to suppose there is any land that would not be materially benefited by draining, and every garden would derive benefit from a proper system of drainage. How often do valuable fruit trees, without apparent cause, become unhealthy, or die, Is it not that the roots have penetrated to where the water, (which should have been drained off,) has become stagnant and impure?

I need not remind you how much is thought of this subject in England, where there are companies formed who drain farms for those who are unable to make the outlay, taking for remuneration, a portion of the *extra produce for a limited period*, and from this are realizing a *handsome profit.* In conclusion, I would state, that the Staten Island Drainage Tile Company has been established to supply drain tiles of the best construction, at the lowest possible rate, having in view the interest of agriculture, more than present profit.

I am, sir,
Your obedient servant,
H. R. BALL.

Stapleton, Staten Island, Dec. 20th, 1851.

I suppose it unnecessary to add, that drain tiles should be *porous*, but I have heard of *vitrified* pipes being used for that purpose.

IMPORTED STOCK IN 1799.

The following letter, which we are permitted to publish, is interesting, as containing facts in relation to the efforts which were early made to improve the breed of our cattle. It has often occurred that animals are presented at our Fairs, claimed to be purely native, and at the same time, to the practiced eye, present every appearance of a cross, which the facts stated in the letter may serve to explain.

New-York, Dec. 16, 1851.

David Banks, Esq.,

Dear Sir—In answer to your request, made during the late cattle show in this city, relative to the introduction of the breed of short horned cattle in the county of Dutchess, I state that previous to May, 1799, Dr. Samuel Bard, General Morgan Lewis, and John De Witt, then residing in the town of Clinton, in Dutchess County, together with either Richard de Cantillon or Colonel William Barber, who were neighbors of Dr. Bard, hired a short horned bull from Alexander Peacock, imported by Mr. Heaton, an Englishman, residing in Westchester Co., and paid him for the use of the bull for one season, the sum of £60, or $150. I hold the receipt from Dr. Bard for the part paid by my father, in the following words:

"1799, May 18—Mr. De Witt, To Samuel Bard, Dr.

To ¼ part of £60, paid by S. Bard to Mr. Peacock, for the use of his bull,	£15	0	0
To ¼ of 56s. paid by S. Bard, for the passage and expenses of the bull from and to New-York,	0	14	0

Rec'd in full,

Samuel Bard."

This bull was in Dutchess Co., I think as early as 1797 or 1798. In one of those years my father purchased a full blood bull calf about six weeks old, from Mr. Peacock, for which he paid him $50, and thus secured ¾ blood. My cousin, Levi Van Vliet, who has always resided in Dutchess Co., within two miles of the farm and mills formerly owned by my father, well recollects the introduction of the breed by the bull "Sampson," and the calf "Julius," and while on a visit to me this month, informed me that the descendants of these two animals in Dutchess Co. are yet distinguishable. It may be observed that the gentlemen who hired Mr. Peacock's bull, had for several years paid particular attention to the selection and breed of cattle, and were possessed of stocks of superior native cows.

In 1803 my father purchased of Mr. Peacock a lamb, for which he paid him $20, and although the stock of sheep in Dutchess Co. were generally very fine, yet the best of native lambs could then be purchased for $1.50. Mr. Peacock's receipt for the price paid for the lamb, is as follows:

"Received of John De Witt, twenty dollars, in full for a lamb sold him. Dec. 5, 1803. Alex'r Peacock."

Yours truly,

PETER DE WITT.

RELIC OF THE REVOLUTION.

Mr. Jordan L. Mott presented to the Institute in June last, the remains of a musket recently raised from the wreck of the British frigate Hussar, which vessel was sunk on the 14th of November, 1780, about one and a half miles above Hurl Gate, in seventy feet of water. Nearly all the stock remains covered with the rust of the iron part, during its process of oxidation. The brass plate which covered the butt, the guard plate and tubes through which the rammer was inserted, all of brass, are all in the most perfect state of preservation, whilst of the iron, not a particle remains in a form that can be recognized as constituting any part of a musket. The wood of the breech is sound, the other part of the stock would fall in pieces but for the rust which encircles it.

Messrs. Howe & Pratt, two enterprising men from New-England have been exploring the wreck for some time. They use a submarine armor, make three descents every twenty-four hours, and remain down about an hour each time. Whether they find enough in value to compensate them for their labor, we are not informed, but infer it to be so, as it would not comport with the character of these people, to spend a whole summer at hard and hazardous labor for nothing. A. C.

PROGRESS OF INSTITUTIONS FOR PROMOTING SCIENCE, AND THE INDUSTRIAL PURSUITS OF MANKIND.

An examination of the subject comprised in the above title would undoubtedly be interesting and instructive, and might perchance be made to conduce essentially in exciting the zeal and adding to the number of those already engaged in these useful pursuits. It is not, however, our intention to trace such progress, or attempt an illustration of its utility, at the present time; but design merely to record an event connected with their history, for the future use of those who may find leisure and inclination to investigate the subject more fully. The north west coast of America, from our infancy until within a very recent period, has brought to our mind little else than an extended waste of ocean shore, or an uncultivated wilderness of savages. True, we have known of the mouth of the Columbia river, and of the capacity and excellence of the harbor of San Francisco, and of the scanty and miserable number of inhabitants of Spanish descent, scattered around its shores. We have fancied, looking to some very remote period, that a day might dawn upon a happy thriving population, destined to occupy these places, where the arts and sciences would be cultivated and flourish; but, lo! as if through the instrumentality of the magician's wand, these things have sprung up in a day! The indomitable enterprize of the descendants of the Pilgrims is as conspicuous there as here. The "Schoolmaster" is there, and under the guidance of his teachings, the desolate shores of the Pacific will be made fruitful, hospitable, and inviting.

We are led to these remarks by the receipt of a circular from San Francisco, announcing the establishment of an institution there for promoting science and the arts, which we wish to record. It is most beautifully printed in letter-press, in a style which cannot be exceeded even here. A. C.

"THE WESTERN WORLD INSTITUTE."

(CIRCULAR.)

This Institute, having been formed by Mr. C. A. Shelton, and his associates, for the purposes hereinafter named, they invite the co-operation of their fellow citizens and the public generally in the promotion of the objects of the establishment.

The objects proposed to be accomplished by the establishment of this institution, are—the promotion in this State of Internal Improvements, and the advancement throughout the entire Pacific coast, (but more especially here) of all the great interests of Agriculture, Commerce, Horticulture, Mining, Manufacturing, and the Arts and Sciences; improvement in the breed of Horses, Cattle, and all other useful animals—and, generally, the development of all the varied resources of this State, and of the whole Western coast and its neighborhood.

To the present museum, projected and established by Mr. Shelton, they propose continual additions of all the rare and wonderful productions of this State and its vicinity, in Mineralogy, Botany, Conchology, Entomology, Ornithology, Ichthyology, &c.; the inventions and improvements produced by Mechanical and Scientific industrial labor and skill, and the collection of every rare and wonderful product of the South Sea Islands, Asia, Australia, &c., both for utility here and for distribution and interchange with similar institutions in the Atlantic and other American States and Europe.

Connected with the Institute is a Conservatory, embracing a large variety of the choicest grains, seeds, shrubbery, plants, fruit, and ornamental trees, and the most rare and valuable Horticultural and Agricultural productions.

To aid in the promotion of these objects, they solicit from Agriculturists, Manufacturers, Miners, Inventors, and all others feeling an interest therein, contributions in any department of Natural History, Science and Domestic Industry, with a particular description of the article contributed, its discovery, origin, properties, location or manufacture, or other information relating thereto.

An Annual Fair will be held for the exhibition of Natural, Artificial and Scientific productions, and the awarding to subscribers, of gold and silver medals, diplomas and other appropriate and suitable testimonials of merit, for successful competition in any branch or department.

Lectures, also, and addresses on Agriculture, Commerce, Geology and Mining, together with Philosophical, Chemical, and other experiments, are intended to be given at the halls of the Institute.

Subscribers at ten dollars for the current year, ending November 15th, 1852, and also contributors to that amount in books, maps, charts, specimens, curiosities, or other valuables to enrich the collection, will have at all times during the year, free admission to the Museum, Library, Lectures and Annual Fairs.

Information on all matters connected with the above objects, will be cheerfully given gratis, at the rooms of the Institute, in the fire-proof building of Buckley & Morse, Clay street, (near Montgomery,) in this city, to applicants personally, or in answer to letters (post-paid) addressed to the subscriber.

ALDEN A. M. JACKSON,
Actuary of the Institute.

San Francisco, Nov. 15, 1851.

ETHERIZATION.

The following communication from Dr. Charles T. Jackson, cannot fail to be interesting to our agricultural friends, as well as others. From the testimony which we have examined there is no room to doubt the fact that Dr. Jackson was the original discoverer of this important agent in alleviating the sufferings of mankind under painful operations in surgery; and it is a matter of congratulation that through the perseverance and humanity of the Doctor, its benefits have been extended to domestic animals. If any proof were wanting to substantiate Dr. Jackson's claim to the originality of the discovery, we think the most fastidious would be satisfied when it is known that the government of France constituted him a Knight of the national order of the Legion of Honor, for this very dicovery, on the report of the Academy of Science of that nation, before which his claim was subjected to the most searching scrutiny. He received also the medal of merit from the King of Sweden, where his claim underwent a thorough examination. A. C.

To A. CHANDLER, Esq.,
Corresponding Sec'y of the American Institute:

SIR.—As you requested, I have employed a few leisure moments in drawing up a statement relative to the application of the vapor of sulphuric ether and chloroform mixed with air, administered by inhalation into the lungs, as a means of rendering man and animals free from all sensation of pain in surgical operations, which I place at the disposal of the Institute.

Respectfully Yours,
CHARLES T. JACKSON, M. D.

New-York, Dec., 6, 1851.

ETHERIZATION OF ANIMALS AND OF MAN.

During the winter of 1841–42 I discovered that the nerves of sensation could be temporarily paralyzed to all sensation of pain by the pulmonary inhalation of the vapor of pure sulphuric ether (oxide of ethyle,) mixed with air, and that while the human body was thus affected, that any surgical operation could be performed upon the etherized patient without producing any painful sensations. In 1846 I caused this discovery to be practically exemplified by applying it in surgical operations both in this country and in Europe, where it was also used by my directions. I also indicated its use in preventing all sensation of pain in domestic animals, upon which surgical operations were to be performed either for the cure of diseases, or for rendering them more serviceable to man.

In the Veterinary College of Alfort, in France, this latter application was fully tested and verified by experiments upon horses belonging to the French army, and it was found to be both efficient and safe, no serious accident having taken place in any of the operations. In this country but few experiments have been made in the use of this means of alleviating suffering in animals, and therefore I propose to call the attention of the American Institute to the importance of this subject.

In many cases fractured or dislocated limbs of valuable animals could be cured if they were rendered managable during the operation so that the proper adjustments might be made and the dressings applied. This may readily be accomplished by rendering the animál insensible to pain, and unconscious by the administration of ether vapor as I shall describe.

Severe surgical operations such as the division of nerves; the application of actual cautery; the removal of tumors and the castration of domestic animals may also be rendered entirely painless by this method.

Humanity to the brute creation requires it of us that we should inflict no unnecessary pain upon them, and it is our duty to avail ourselves of this means of rendering them insensible to pain whenever we are obliged to perform upon them any severe surgical operation.

The means is easy, safe and efficient, and any intelligent person can administer the ether as I shall describe the method.

We may make use of pure washed sulphuric ether, or of a mixture of it with chloroform, the mixture being preferable on account of its greater power and concentration, while pure chloroform is dangerous and ought not to be employed alone, its vapor being so dense as to be with difficulty removed from the lungs in case an over dose is administered, while sulphuric ether vapor is light and is easily removed. The mixed vapors also act more kindly on account of the slightly stimulating property of the ether overcoming the deadly sedative effect of pure chloroform. In actual practice, I have never known of a single fatal accident from the administration of the vapor, or of this mixture, provided air was also admitted into the lungs mingled with the vapor so as to sustain the functions of life as required for respiration. No unpleasant accident has ever happened under my hands from the administration of either of these anæsthetic agents though my experience has been most extensive, and my observations have been made on persons of all ages and temperaments. I have found that a mixture of four or five measures of pure sulphuric ether, and of one measure of pure chloroform (ter-chloride of fermyle,) produced the best effects upon man and upon animals.

In administering this mixture to man I make use of a folded square towel with the edges pinned together so as to form a hollow cone leaving the apex of the cone open so as to admit freely the air and to allow the addition of more of the fluid as it evaporates from the cloth by inhalation.

The base of the cone is extended over the nose and mouth, so as to enclose them, and the patient is made to breath freely and deeply and as much as possible by the mouth so as to admit into the lungs as directly as possible the vapor mixed with the inhaled air. In a few minutes the patient's eyes roll up, the pupils dilate more or less and he falls into a most agreeable artificial sleep, or trance, dreaming most frequently of journeys over railroads, in steam boats or in coaches, and is often quite angry at being awakened from his pleasant dream. Now the anæsthetic state commences before unconsciousness, and is perfect and entire in the unconscious state, insomuch that any of the most painful operations known to surgeons, may be performed upon him, without his manifesting the slightest sensation of pain, or suffering of any kind; he will tell you even after the red hot iron has been passed over the most tender parts of his body that he felt nothing, that he had a very pleasant dream, &c.

In labor, women who have been rendered even partially insensible to surrounding things, will inform you that they feel no pain though they know that the uterine contractions are going on at the time, and when rendered unconscious they do not feel the agony usual on giving birth to their offspring, but were in a pleasant dream and felt no pain whatever.

The *nerves of sensation only*, being rendered insensible by etherization, it is obvious that those of motion and particularly those of organic life and of muscular contractility of the uterus, remain unimpaired and perform their usual functions; owing probably to the membranous, and less muscular character of the uterus of quadrupeds and the less muscular force required for the extrusion of the foetus, thus animals suffer but little pain in giving birth to their young, and hence it is unnecessary, except in rare cases of difficult labor, to administer ether to them; there are cases however, where the saving of life in a valuable animal, may require us to employ instruments and force, and then ether may be most advantageously administered, and will render the animal passive and the operator may safely and deliberately perform his work.

In more usual surgical operations upon animals, particularly in that of castration of the bull, stallion, hog and ram, we should always apply the ether vapor by the lungs, as I shall describe. There is no danger in administering the ether to any animal that has sensible perspiration, but to those which do not sweat we must apply it more cautiously, thus the ram and bull will bear a very high dose without the least danger to life, while the *cat* is readily killed by a full dose of chloroform. I have not seen death produced by the use of pure ether vapor mixed with air in any case or in any animal, and yet I can conceive how an animal having no free perspiration should retain for a longer time the absorbed vapor of that liquid as well as of chloroform.

Dogs have a perspiration mainly from the tongue, and hence they do not get rid of the absorbed vapor so readily as those animals having a free cutaneous perspiration, and are therefore more likely to suffer ill effects from retained chloroform. All animals excrete the absorbed vapor by the skin, lungs, and kidneys, in their perspiration, breath and urine, and thus after the effect of the anæsthetic agent, is over, the system clears itself very soon of all traces of it by the above named channels; this I have proved by numerous analyses and it is obvious to the senses that the urine of a person who has inhaled ether vapor is charged with portions of it for several hours afterwards, and we can smell the ether in the breath and also in the cutaneous perspiration

In administering ether and chloroform to animals, I make use of a wire muzzle, or basket, which is fastened around the nose and mouth of the animal and fixed in its place by proper straps. On the horse or ox a headstall is all that is required to fix the wire basket in its proper position. Into this basket I first put a very coarse open textured sponge, which has been soaked in water so as to soften and swell it, and then it is squeezed dry. The basket and sponge being put in the proper position, I take this mixture—pure sulphuric ether one pint, pure chloroform one gill—and mix them in a bottle; then I pour upon the sponge, from time to time as needed, this fluid, an ounce at a time, renewing it as it evaporates. The animal breathes it freely into the lungs and soon gently falls down in a deep sleep of insensibility and unconsciousness and is entirely passive, so that any operation may be performed and without any struggle of the animal or any sign of pain. A very refractory horse may by this means be made to submit to the farrier in being shod, and will soon learn to submit afterwards, and probably without the repetition of the ether.

Any one will see how important it is to be able thus to control animals during many operations that they may be required to submit to.

The apparatus for etherizing a bull will of course be fitted to the form of his nose, and should be in other respects like that for the horse; he will bear the ether perfectly well in full doses.

The hog I have not seen under etherization, but I doubt not he will readily come under its influence, but I do not think he will bear so well a high dose as a horse or ox.

Sheep bear it perfectly well, at least they do the breathing of pure ether, I do not know how chloroform may affect them, and should be a little more careful in the administration of that agent. It is probable, however, that the admixture of chloroform with ether will prove safe and efficient. Sheep have been operated upon under ether in England successfully, since the publication of my discovery.

Wild and ferocious animals of the menagerie, have been etherized successfully in Europe, and surgeons have fearlessly performed upon them surgical operations while they were in an etherial sleep.

It is supposed that the tiger and leopard are very susceptible to the influence of anæsthetic agents, like all the cat kind.

In administering anaesthetic agents to such animals, I suppose a sponge would be attached to a strong rod, so as to be placed near the nose of the confined animal which should be fastened by a chain so that he could not successfully resist the application.

In Berlin, chloroform was administered to a bear without due admixture of air and it killed him.

It must be kept in view that air must be freely admitted in administering all anæsthetic agents, then there is little if any danger to be feared. In consequence of this accident in Berlin, etherization was for a time in bad odour, but so soon as I learned the facts I wrote a letter which was translated into German, and published in Berlin, and set all right again by showing the way to avoid such accidents. If after the administration of ether or a mixture of chloroform and ether to man, we find the pulse reduced about 10 beats a minute only, and that it is gradually rising and the respiration goes on easily, we may feel no apprehension even if the person should remain unconscious for an hour or more. But since this long sleep is not necessary, excepting in cases of violent insanity, when it is often beneficial, we generally recover our patients by suddenly applying a cloth wet with *ice cold water to the face, forehead and head.* This generally brings them quickly out of their etherial sleep.

I should not omit to mention one very important precaution in etherizing human beings, and that is not to administer the ether when the patient has a full stomach, for troublesome nausea and unpleasant symptoms are not unfrequently the result. We should not administer the ether to a person who has been drinking ardent spirits for it is likely to make him quite troublesome and he is not easily put under the proper influence of the ether. It is a curious and important fact that persons who habitually make use of an excess of ardent spirits withdraw themselves from the benefits of etherization, and that strictly *temperate people are always most kindly affected by the ether.*

An habitual drunkard is merely made wild and boisterous by a dose of ether vapor that would put any temperate man into a most delightful state of sleep of insensibility, with pleasant dreams, or into an unconscious state of deep sleep. This fact has its *moral significance*, and it also proves that etherization *has no analogy to drunkenness*, as had been falsely supposed by some medical men. We do not perhaps know exactly what is the real *proximate cause* of etherial insensibility, but thus much I do know, *it is not analogous to drunkenness, nor is it any form of asphyxia.* It is a peculiar state of the nerves as yet little known, but differing wholly from narcotism by opium, &c. In this hasty sketch of the method of etherizing man and animals I have avoided many details that might prove entertaining to the reader, and an array of cases which might have been required at the time I first made this curious discovery known to the world, but which are now unnecessary, since the public know that the effects here stated have been produced in hundreds of thousands of cases in Europe, Asia and America, in all lands where I have made known this means of alleviating sufferings in man and in animals.

The unfortunate substitution of pure chloroform for ether and for the mixture of ether and chloroform, has caused all the fatal accidents that have happened, and thus the use of ether itself, so unfortunately confounded with that dense and dangerous agent, has been in a measure checked, because people do not discriminate between them, and know that etherization by means of pure sulphuric ether vapor and even with a small poportion of chloroform mixed with it, for the ether vapor lightens that of the denser vapor.

Shortly before publishing my discovery of the anæsthetic effects of ether vapor, I made use of a solution of chloroform in alcohol, called at the time strong chloric ether, but it was found to be a very uncertain preparation, and one that is readily decomposed by the action of water in a wet sponge, hence it is not thought so proper for surgical use. It is however employed to some extent in the Mass. General Hospital, but very unskilfully, as it is applied on a very large wet sponge, so that nothing but pure chloroform is really administered when the surgeons suppose they are administering alcohol with it. The water in the sponge really holds back every particle of the alcohol, so that none of it is volatilized, and therefore it is not inhaled with the chloroform. When chloroform is dissolved in sulphuric ether, the two liquids volatilize together, and this is truly a scientific conbination of nearly equally volatile ingredients.

CHARLES T. JACKSON, M. D.,
Chevalier de la Legion D'Honneur,
Assayer to the State of Massachusetts, &c.

DRAINING AND UNDERDRAINING.

[Communicated by S. VAN WYCK.]

No land is fitted for agricultural purposes generally, that is for producing the grasses and grains healthily and abundantly, if there is a surplus of water lying on the surface or near it, in the season of germination, and growth of the plants. This may be owing to the stiff tenacious character of the surface soil, or from springs beneath it, or exuding to the surface. In lands which are usually called uplands, and which lie pretty high, and a portion of them descending more or less, these in our county, are rarely troubled with superfluous water. Valleys sometimes without proper outlets, or where these are obstructed, the water flows back on to the upper parts, and renders them too wet for plants; this may be remedied in most cases by making new outlets or cleaning out the old ones. Marshes, morasses, or swamps, also are frequently inundated with water most of the season, this water is apt to be fed by springs underneath the surface of such morass grounds, it is caused in a great degree by the drain of the higher lands, and sometimes its swampy character is owing partly to both. In our county where we have such a quantity of hot sun, that one day in any of the summer months with us, will probably exhale as much moisture from the earth on an average of seven years together as the sun does in Great Britain, in eight or ten days. If the rains that fall from the clouds are nearly equal in the two counties, the dews from the cooler and more temperate climate of Great Britain are heavier and more frequent, and keep the earth much cooler. There is more alumina or clay in the soil of the latter county generally, than with us, this, most geological accounts confirm. This with the superabundance of moisture from the causes mentioned, makes the soil much more retentive of moisture, both on the surface and a considerable depth below. If clay lays below the suface some distance, it increases the water in certain localities and holds it like a dish. This in very wet seasons gets full and runs over and in places exudes to the surface, and keeps it too wet and soft for stock, or teams to move upon. These poach and cut it up, and render it uneven, unsightly, and useless for most farming purposes. Neither the grasses or grains, will grow healthily upon such a surface in summer, and much of the farming lands of Great Britain, are or would be in this state the year through. The general remedy to meet this difficulty there, is draining either on the surface, underneath, or both. Now the general pactice is underdraining. This with those who are able to meet the expense, as it is pretty heavy if perfectly done; it is found to be the cheapest, first, it lasts the longest without requiring repair, the land can be rode and travelled over with teams and cattle, it is made more smooth and level, looks better, and what is most essential it is a saving of land, as the drains from this depth can be ploughed over and tilled. This is important in Great Britain where land is scarce, and very dear. The drains are made from two and a half, to eight feet deep, according to the soil, the shape of the surface, the falls and variations of these, all to be calculated and allowed for in making the main drain, the fittest place in the ground for this, and also the lateral drains, how many of these last the ground requires and their points of intersection with the main drain. It requires some knowledge of enginery, so far at least as relates to the taking of levels, attended with nice mathematical and arithmetical calculations, and all to make the draining lasting and useful, accompanied with great experience in the art, and the soundest judgment. It is admitted by all who have both practiced and written most scientifically on the subject, that draining when it is done, should be done well, or it had better not be done at all. A little additional expense must not be regarded, or the whole instead of being beneficial may be a total loss, or may possibly be injurious to land, or at any rate, to restore this to its former tolerable condition, might cost more than good draining would in the first place. We are speaking of draining as required and done in Great Britain, where from the great moisture of the soil and climate, and the low temperature of this last compared with ours, artificial means must be resorted to, to lead off or get rid of its surplus water or moisture. This too is necessary with by far the greater portion of its land to get abundant crops of any kind. There are several tables given of the expense of draining in Great Britain by able authors, and well acquainted practically with the art. We will give a few specimens for a better understanding of the subject. Mr. Carmichael as much relied on as any, stated they cost per acre £6 7s 1¾d, about $32; £7 13s 7½d, about $38; £4 9s 8d, about $21.50; the difference of expense is owing to the depth and number of lateral drains. This was in 1845 or 1846. Since this they have made improvements, and drain some cheaper. Labor for this work would be in England, from 2 shillings, to 2 shillings and 6 pence per day and found; the commonest laborers 1s 3d to 1s 8d; in our country much more. Yet with us, the few gentlemen who have done anything at it say they do it considerably cheaper, but whether as thorough may be questioned. Mr. Colman, in his last book, entitled, "Travels in Europe," gives estimates of the expense of thorough draining on the estates of the Duke of Bedford, in 1841, 2, 3, 4, £9 12s 0d, about $46; to £5 1s 0d, about $25. Mr. Colman states generally, that great agricultural improvements have been made of late in every branch, and among others the important one of draining, that the tile and pipe are now almost exclusively used, and that it is done for nearly or quite one half the expense it used to be; he gives no other estimates of any lower in actual practice, than those extracted from the records of Woburn Abbey, of the Duke of Bedford's estate. Perhaps he means that these are a specimen of the great reduction of expense in the art of late years, as '44, '45, and 46, are not a great while since. Cheap as these may be considered by Mr. Colman and some others, of our countrymen, they are by far too high for our farmers generally to adopt, and would be if they were reduced one-third, or even one-half from the highest estimates. There are other reasons besides the great expense, although this of itself is of sufficient weight, why, underdraining will not be adopted generally in our country probably for many years to come; first, as we before stated the far greater quantity of hot sun we have here during summer, and a part of spring and fall, than they have in many parts of Europe, and especially Great Britain, it follows that much more moisture is exhaled from our soil, and we are less likely to have a surplus of it, and make it necessary to convey this off by artificial means, and certainly not by means so expensive as underdraining; second, we have more sand in our soil take the whole surface of our country, than they have in Great Britain. This is of a hotter and more drying nature than clay, and aids the sun materially in evaporating moisture; it is also more loose and porous, water runs through it easier and either passes off on the surface or near it, or runs down into the earth and is carried off, or lost in channels of considerable depth. Land called uplands or lying pretty high, cannot pay for underdraining them admitting they produce some more, will this increased production pay for thorough draining a farm of some size with drains several miles in length? It is said land holds manure better, it retains moisture longer, stands droughts better, admits from that great store house of manure, the atmosphere, some of its valuable ingredients into its bosom, ammonia, carbon, nitrogen &c., keeps and imparts these to plants as they want them. All these descend from the Heavens into the surface of the earth and remain there, for the use of plants with sub-soil ploughing, pulverization and proper tillage generally. Nor do we think a half dozen miles of good pipe and tile draining on a good upland farm, without excessive moisture at a cost of from $25 to $35 per acre, would do this more effectually; at any rate not so effectual as to remunerate the farmer for his outlay, which is here put down at rather a moderate rate whatever may be said to its being done much cheaper. There is nothing in the material of these pipes or tile, placed from 3 to 5 feet under ground and well covered with earth, to attract these gaseous manures from the atmoatmosphere and retain them more powerfully than a good subsoil, well pulverized without them. Carbon, hydrogen and ammonia, come down from the regions above in the daily opperations of nature, and have done so from time immemorial and probably will continue to do so; rain, snow and hail, bring them down, and dews as they rise up from the earth in the shape of vapor, are condensed and fall back upon it at little lower temperature in a liquid state; these contain more or less gaseous manures and contribute their aid from the great store house, the atmosphere, to enrich the earth. Some earths benefit more by these extraneous supplies than others, according to the state they are in, nature has been more liberal to them and they possess more of the organic and inorganic manures from their great storehouse within.

Alluvial earths for instance, are a compound of the rich sediment of rivers, brought down for hundreds of miles, and in some cases thousands, like some of our western rivers, and depositing it upon their banks and extensive bottoms below. This has been going on for centuries in some sections of our country, and the soils formed thereby considered as nearly or quite inexhaustible. The only drains these lands get are made like their soils, by small natural rivers, carrying off their superfluous waters into the main ones, like the Ohio, Mississippi, Missouri, and others. These natural drains are the only ones which our country, generally speaking want, at any rate any other system will not pay, or will not pay as well as those made to our hands. We find them more or less performing the useful work from the Aroostook to the Rio del Norte, and from the Atlantic to the Lakes and the Rocky Mountains. Outlets could be made or cleared out from swamp, morasses, and low grounds generally, where water is apt to stand too long for the health of man, or useful plants, and the water from these led into small streams, and from these into the larger, and conveyed away.

The small streams could be improved in many cases, and in some made new, so as to carry a larger volume of water, and without injury to the banks or the land, and thus made more efficient drainers. This could be done at little labor or expense, compared with underdraining a whole country with tile, pipe, and stone, or large sections of it, whether it lies high or low, wet or dry—whether the soil consists of pure sand or pure clay, or something like a suitable mixture of both. We think such a system in practice, would be tapping that great magazine of manure, the atmosphere, to get a more liberal dose from it at a pretty dear rate, when it is questionable, too, whether nature would not furnish the most liberal supply from the store-house of manure in the clouds, and also a more useful one, with proper tillage, than pipe and tile buried some several feet under ground. These would be likely to make a considerable rent in the farmer's purse in constructing them and letting the contents of this out more freely than the manure from the skies would repair and replenish for a very long period. Swamps and morasses, or very low wet ground receiving the drains of hills or high lands around, might sometimes be drained on the English plan to advantage, especially when accompanied with a long purse, or plenty of means. A gentleman on the banks of the Hudson, in this State, a good scientific and practical farmer, and with ample means, lately informed us that he had drained according to the most approved English system within the last summer (1851) about twenty-six acres of such ground—a perfect swamp covered most of the year with water, in doing which he struck, in the subsoil, a rich marl bed, composed a greater part of lime, which would make an excellent manure for his dry upland. He also informed us that he had so managed his drains as to collect water enough from them, and preserve it, for irrigating, to a considerable extent, some of his grounds; that from all these advantages, including the increased production of these twenty-six acres, he had a fair prospect of being speedily remunerated for his outlay in the operation. Others, in following such an example, might not be so fortunate as to strike a rich marl bed; but still, by proper management, they might procure water enough from their drains to serve the purpose of irrigation. This gentleman also informed us that he had underdrained upland of a peculiar character and soil, and meagre in its products, so as to ameliorate it to such a degree as to yield him abundant crops.

Most European travellers and writers on agriculture say, that underdraining on the continent is practiced to a very limited extent compared to what it is in Great Britain. The soil there is generally much drier, especially in France, Italy, some parts of Germany and the low countries. These depend more upon the natural drains, large and small rivers, and improving them as we do here to a certain extent, and must do more to make them more efficient drains. Like us, in France, Italy and Switzerland, they have more and higher mountains than England; these make more and larger rivers, which sweep over a greater extent of country, drain a greater surface and, at the same time, make more alluvial soil. A more powerful sun, too, on the continent, or large portion of it, drys its soil, much of it of a sandy loam, sooner and fits it earlier for tillage. Swamps, morasses and stiff clays they sometimes improve by both open and underdrains when there is a prospect of their being remunerated in a reasonable time for the outlay.

Mr. Colman states that some of the best farmers in Europe are in Flanders, and where there is no regular English uunderdraining; this is done by sub-soiling, with the spade and plough; the Flemish call it trenching—they go from twenty to twenty-three inches deep; they rely much on deep culture and keeping their land loose and friable so as to admit the water and air freely through it, both of which they consider great fertilizers. Water, they say, must not stand upon the surface of land, or underneath near it; when it is so great as to do this they convey it off by open ditches or drains. In some places these are so large, and yet so filled with water, that they serve to convey off their crops in small boats, and bring back manure for their farms. The Flemings manure very high, principally animal and vegetable matter made on their premises; they buy these too wherever they can get them, and of every kind. If under-draining, according to the English system, was profitable in Flanders, the Flemings would be the first to perceive and enter into it. Their agricultural knowledge appears to be derived generally from practice and little from books; a few journals or periodicals on farming are mostly the books they read; their science on the subject appears to be collected from these, close observation and daily practice. Colman says, an intelligent Flemish farmer has in view from his tillage and crops "that which he can obtain with the largest profit, the least expense and the smallest injury to the land." The farms are small compared with most of ours--from six to one hundred acres kept clean, free from weeds and in the most perfect order; and as their chief implement is the spade, the whole is like a garden and "executed with a neatness and exactness the most particular and delightful to the eye." The quantity of produce they get from these small farms, Mr. Colman says, is wonderful; the most untiring industry and rigid economy are the leading features in every branch of their husbandry. We will quote here the opinion of Liebig, the great German agricultural chemist on the system of English under-draining. He says: "The system of draining which has been so extensively followed in England brings the land into a state of a great filter through which the whole soluble alkalies are *drawn off* in consequence of the percolation of rain, and it must therefore become more deficient in its *soluble* efficacious elements. Attentive farmers must have observed that after a certain time the quantity of grain on land laid dry according to this principle, that the produce of grain bears no due proportion to the produce of straw." If this is the case in the wet moist soil of England, it must be much more so in our comparatively dry soil, and the straw still more increased at the expense of the grain with us by the English system of under-draining. We Americans are a people in many respects peculiar to ourselves. These peculiarities arise, in a great measure, from our happy form of government, and the tenure by which all our land devoted to farming is held. Every man may be said, with us, to be the owner of the soil on which he lives. Yes, every man, for the exceptions are so few compared with all the lands of the nation and owners of them, that they are hardly worth noting. No landlords to look up to for orders and pay rent to as in most parts of Europe; each man with us is his own landlord, and he is truly one; as many farmers, in every section of our immense country, live better, more happy and independent than many princes in Europe. Here with us, if one man has the means of living a little more expensively than his neighbor, the latter possesses means enough to give him all the necessaries and comforts of life without its superfluities; both classes feel equally independent and equally satisfied with their lot. No absolute distress meets the eye in scarcely a neighborhood of any farming section of our country; not, as in many parts of the old world, a thousand mouths petitioning for bread, or ready to do any thing they may be told or bid to get it. This is not only the case in the large cities and towns there, but in many of their agricultural districts. Two or three enjoying, if they could enjoy with so much distress around them, the comforts and luxuries of life, and thousands starving because they cannot get land of their own to work, nor pay enough for working that of others to keep them alive. If such poor dependents can live by the pittance they get by their labor, their lives are made only a little less miserable than death. Our farmers, from this circumstance alone, cannot cultivate their farms on the expensive scale that landlords do in Europe. Farm labor with us is three to five times higher than it is there. This affords a comfortable living for the laborer and his family, and this is more gratifying to our farmers than to see him toiling and suffering to fill up their garners and enable them to live in splendor with starvation and misery around them.

Our farmers cannot with the price they pay for labor and the present low rate of produce adopt the expensive systems of farming pursued in many parts of Europe. At any rate not more than one in a thousand take our whole country through can afford to do it. Some improvements where the additional expense is light compared with others, will be tried by a portion of our farmers, and if found to pay on trial may in time be generally adopted. To urge an early or immediate adoption in ever such vehement language will make very little or no impression on them, unless perhaps it may be to make a large majority of them more stiff in adhering to their old systems and ways of culture. It is not meant by this that they will not listen to reason and be readily convinced of truth and right like most other intelligent people, but this must be kindly done with a manner evincing the best intentions and divested of all appearance of dictation. Besides it may not be convenient for him to commence operations on any new plan quite as soon as the scientific farmer recommends or thinks he ought, he may not be prepared with means to meet the expense however small it may be, or other similar causes. These may be important to him and a sufficient reason for delay however trifling they may appear to others, and they should be so received by his learned advisers. This would be much better than to sneer at him and set him down at once, when speaking of him, and all of his class as ignorant, and men of narrow contracted notions. At any rate whether what he says or does on such occasions be well or ill received he is the best judge of his own affairs and he will act according to his own judgment, and not be deterred by ridicule or any thing else from managing his affairs as he thinks best. This is according to his usage and habits growing out of his calling, pursued by him and his ancestors perhaps, for many generations, that of an independent American farmer. We further hope that this same class will continue to increase in our country in strength and numbers for ages to come, and especially in the strength of their habits, as we believe them to be the safest reliance for the permanence of our political institutions. We question the morality too of recommending and encouraging in strong decided language such an expensive system as underdraining generally to our farmers on all lands, no matter where located and how their soils may be constituted. Not that we have the least apprehension that many of them will be influenced by such recommendations, but a few might and try it, and without sufficient means to do it well. Thus they would sustain a double injury not only for doing what their land did not require and probably never would if properly tilled, but doing it badly and thereby positively injuring it irreparably. Here is not only the unnecessary expenditure on their shoulders whether done well or ill, but a serious damage to the land if badly done, and altogether would certainly weigh down any ordinary farmer and end in his ruin or inevitable embarrassment. It cannot be moral to advise, much more, vehemently urge upon the community a system attended with such ruinous consequences. We believe most of those, and the whole number we think, are few who recommend it, do it with the best intention, and because they believe sincerely in the utility of the system. These we think, in time will see the impolicy if not immorality of continuing publicly to support and advise it and will desist from it, especially when they all see the few converts they make, and these likely to pay so dearly for being influenced by their advice. In England and Scotland where the system of underdraining has been brought to the greatest perfection and where their soil and wet moist climate require it perhaps more than any other country, and where they have done so much of it, we say even here they have millions of acres yet undrained and which require it as much probably as any they have drained, but the great expense in addition to many other burthens which weigh so heavy upon the tenant farmers there deter them. Labor there is not much more than a quarter of what it is here, and they can do it much cheaper than we can. In addition they have at this time and they begin to feel it most sorely the consequences of the *free trade* system bearing upon them, this gives double weight to their burthens. The products of their soil have been reduced by it nearly one half in value by free admission of all similar articles from every country in the world, free of duty.

Every agricultural periodical that reaches us at this time contains bitter complaints against the *free trade system* ; it presses, these say very hard upon the farming interest of Great Britain, it has only commenced; as it progresses and increases in years, it must in weight, and will, if continued, finally weigh them down, and they must be crushed under it. In eloquent and forcible language, these say, the farmers cannot go on improving their farms as they have done, no increased production arising from such improvements, will remunerate them for their outlays at the present price of their products. In these, in a great degree, they must stop. In underdraining, which is the most expensive, and so essential for the amelioration of the British soil they must necessarily cease. It is the continual progress of Great Britain in all these, for more than fifty years that has made her soil a garden; the abundance of its products, and their richness and beauty the admiration of the world, all must be suddenly checked, if not entirely stopped, to give the visionary system of *free trade* a trial. Let it be so, they say, as long as the law exists it must be obeyed, that existence they predict though, will be short, yet it may be too long for the speedy reparation of the serious injury it is sure to cause. There is a new plan lately announced in England for underdraining by means of the *plow plain drain*, which it is said will diminish the cost nearly one half. This, if true, is important for Great Britain at this time, when the free trade laws are in full operation, she may go on perhaps with her underdrained portion of improvements, and not stop there. Although the plan is spoken favorably of as practical, time and experiments with it are necessary to establish its character, and bring it into general use. This, if true, would help our American advocates of underdraining, they could then recommend it as an improvement for its *cheapness*, but if unnecessary, as many contend, it would be dear at any price to American farmers.

To recapitulate the substance of what we have said, we do not think underdraining ought to be recommended to the adoption of our American farmers. First, because our climate does not require it, it is not so moist and wet as the climate of Gt. Britain by considerable, even if we have as much rain to fall on some sections of our country as they have on some of theirs, take the average of the whole of the two countries, take any month in the year, or the whole year. Second, we have a far more powerful hot sun here, than they have there, from May to November, this exhales the moisture from the earth rapidly, and dries it some distance beneath the surface, and there is very little surplus water, comparatively, to be conveyed away by artificial means, either from the surface or underneath it. Third, there is more sand in our soil generally, than exists in the British soil, this is of a drier and hotter nature than clay, and aids the sun materially, in the process of drying and evaporation. Fourth, the great expense of underdrains, labor is more than three times as high here as it is in Gt. Britain, and our farmers will not undertake an improvement that costs so much to do it well, and whose necessity at all, is a serious question. Besides if it is necessary, and they are to be benefited by it, that benefit, it is pretty certain, will not meet the expense at the present price of their products, and what they have been for several years, and what they are likely to be. Fifth, when from the whole operation exclusive of gain therefrom, it may with all the pains and expense bestowed, be executed so imperfectly as to make it an equal chance that such an injury may be done to their land, without any advantage, as to occcasion serious embarrassment and perhaps total ruin. Sixth, from the *habits* of an independent American farmer, acquired partly from the free government under which he lives, and being his own landlord, and partly from his associates around him all of the same class, that he will not have these broken in upon, and persuaded suddenly to adopt any new project or experiment, whether it be productive of good or ill. He must, and will take his own time for it, if on reflection he sees fit to adopt it Seventh, from the quantity and cheapness with us, open draining will answer his purpose either in upland, or in case of swamps, morasses, or very low wet ground, the value of ground lost by this is trifling, compared with the expense and hazards of underdraining, the former costing from $5 to $8 per acre, and the latter sure to cost, if done well, from $25 to $35 per acre. Besides from the cheapness of land with us the farmer can change with little difficulty, we are not so wedded to localities here as they are in Europe, he can sell out and buy another, and often for less than it would cost him to improve his old one, and possessing equal, and often greater advantages for making money on.

ON FENCES AND FENCING FARMS.

BY R. L. PELL.

Any continuous obstacle interposed for the purpose of separating one field from another, is called a fence; and the material with which it is constructed, differs according to the soil, as well as animals that are to be confined, or excluded. Fences are either dead or alive, except when they are compounded. When alive, they are planted in hedges, and pruned in the shape of a wall, composed of rows of shrubs planted closely together, such as privet, hawthorn, locust, willow, apple. Dead fences are made of wood, stone, earth, sods; and compound fences, such as a ditch with a hedge on the side of it, or a bank of earth. I will admit that some fencing on a farm is indispensably necessary, such for instance as an outside fence or enclosures around a garden or barn; but when you come to the interminable cross fences you usually meet with on most farms in America, I consider them a perfect curse and plague, entirely unnecessary, except to restrain cattle and horses within certain bounds, and they should never be permitted to run at large except in the western prairies, with a brand on their backs, to be recognized by their owners. I would even say outside fences should not be tolerated; we are compelled to make leagues along our public roads, to keep out a few stray cattle belonging to some unjust neighbor who keeps more than he is able to feed, and therefore permits them to forage upon the just man's premises, which is burdensome and tyrannical. If proper laws were passed by our State Legislature, this difficulty would be obviated, and outside fences even would be abolished. I have travelled hundreds of miles in Germany, without ever seeing such a thing as a fence in any direction. There the cattle are housed or sent to the hills with shepherds to attend them and the farms are divided by monuments; few fences are now found on the continent of Europe, large tracts in Great Britain are entirely free from the nuisance, and six years hence people there will almost have forgotten the meaning of the word. I have been frequently struck with the beauty of the immense fields in the vicinity of the Connecticut river, in Connecticut; which are free from fences, from the fact that the annual overflow of that river renders it impossible to build a fence that will withstand the flood; they manage to do without fences, by placing the cattle they wish to pasture, in the care of a man who gives bonds for the faithful performance of his task, which is to keep the animals within given bounds, on the commons selected for that purpose. A large portion of the south, and east and of Long Island, owing perhaps to the scarcity of materials, is unfenced, cattle are there seen browsing under the care of proper persons, who keep them without that nuisance, a fence within certain bounds. A large portion of Nantucket is unfenced, and cattle are pastured in the same manner. If the inhabitants of those portions of Connecticut, Long Island and Nantucket, can keep their cattle on unfenced lands, what is to prevent their neighbors in other States from doing the same; the costs of fences in Pennsylvania, now constructed, amounts to 100,000,000 of dollars; you will find a calculation in Mr. Allen's agriculturist to this effect, suppose the State of New-York, to contain a surface of 30,000,000 acres, deduct one-half for unenclosed lands and water, and it leaves 15,000,000. We are of opinion that the average size of fields here is about 15 acres; call the average 20 acres. To surround one of these fields, would require 230 rods of fence, we will make allowances for lanes, &c., and call 120 rods sufficient for each 20 acre field.

Divide 15,000,000 acres by 20, they make 750,000 fields. These multiplied by 120 rods, the length of fence necessary to enclose each field, makes 90,000,000 rods. Say they cost on an average 75 cents per rod, this would amount to the sum of $67,000,000 for fencing the State of New-York alone. Allow this to be one-twentieth the cost of all the fences in the United States, and the result would be $1,350,000,000! these fences on an average would last 25 years; the cost would then be $54,000,000 per annum, which, with $81,000,000 of interest at six per cent, on the first cost, amounts to $135,000,000 annually, expended in the United States for fences. The farmers in the United States were born and educated under this erroneous and hurtful system of fences, and consequently they imagine that there is no possibility of existing without them. There are numerous other reasons why they should be abandoned.

1st. They entirely destroy the landscape beauty of the country, and are decidedly odious to all beholders.

2d. They form a receptacle for snow, and collect drifts on either side of them, delaying the operations of the husbandman in spring.

3d. It is difficult to till the land successfully in their immediate vicinity.

4th. They cause an inconvenience to the farmer when drawing manure to, or crops from the field.

5th. They cause disputes between neighbors, which sometimes end in death, and always in bitter feelings, law suits, &c.

6th. They induce the growth of all sorts of injurious weeds, which distribute themselves over the contiguous fields of grain.

7th. They form a place of concealment for many varieties of vermin, inimical to the operations of the husbandman.

8th. They cover, and thus render unavailable to the farmer, about four acres of land out of every hundred.

9th. And if the agriculturist is induced to borrow money, nine times out of ten the object is to build with it what he considers the first requisite on a farm, innumerable fences.

During the past year I have removed miles of fence and intend to continue the work of destruction until the outside fences only remain. So soon as our Legislature pass a law making it incumbent upon all to keep their cattle within their own domain, that too shall follow the rest. I am convinced that the only way to keep stock, such as horses, milch cows and working oxen, when land is valuable, is to soil them. The advantages are numerous:

1st. No cross fences are required on the farm.

2d. The cows give twice as much milk as when running at large.

3d. They are fit for the butcher in the fall, being fat.

4th. They are always on hand to be milked.

5th. They are never worried by being driven to and from the pasture.

6th. All the refuse grass of the farm is eaten.

7th. Eight acres will keep them longer than forty would depastured.

8th. The fields are always in order, not being poached by their feet in wet weather.

9th. Food may be cut and carried to them in about the same time usually consumed in driving them long distances to and from pasture.

10th. The amount of manure made is enormous, each cow voiding 12,000 pounds of urine in a year, which is absorbed by the refuse on the yard, and the carbonic acid and ammonia, retained by means of sulphate of lime and charcoal dust. If the farmer would adopt the soiling system, he would obtain at least nine times more manure than he does by depasturing; and I here assert without the fear of contradiction, that without the aid of manure no man can make a living in our section of the United States by farming.

IRRIGATION.

BY S. VAN WYCK.

Irrigation is, in its great feature the reverse of draining, in tillage this is used by farmers to convey or lead water on land that is deficient in moisture, or has not enough in ordinary seasons for the healthful growth and maturity of plants. Not that in common seasons good land well tilled would not produce moderately good crops without a supply of moisture by artificial means, beyond the supplies of nature, but with this it produces more abundant and perfect crops. The system of irrigating dry lands is as old as the earliest records of history. The Israelites made use of it and considered land at that day, as barren and desolate without it. The soils of many oriental nations were of a similar character and are to this day. The sandy soils of Arabia, Egypt, the English East Indies, and of China, the peopla are obliged to irrigate a large portion of their lands to obtain anything like good or even tolerable crops from them, and ever have done. Dr. Shaw, in his book of travels in the East, a work of reputation, says: "The following is the modern mode of raising and using the water of the Nile for the purpose of irrigation in Egypt. Such vegetable products as require more moisture than what is occasioned by the annual inundations of the Nile, are refreshed by water that is drawn at certain times out of the river, and lodged in large cisterns made for that purpose. The screw of Archimedes seems to have been the instrument formerly made use of for that purpose, though at present the inhabitants either supply themselves with various kinds of leather buckets, or else with a *skiah*, as they call the Persian wheel, which is the most useful and generally employed machine. Engines and contrivances of both these kinds are placed all along the banks of the Nile from the sea to the cataracts, their situation being higher, and consequently the difficulty of raising the water being greater as we advance up the river." Dr. Clarke, another eminent traveller and writer, and later than Dr. Shaw, says: "A machine similar to the Persian wheel is still employed in China by the cultivators for the purposes of irrigation. The early employment of irrigation by the Egyptians and Chinese, was most likely the result of the good effects which were observed to be produced by the overflowing of the Nile and Chinese rivers; as in China, irrigation, it seems, has been practiced, according to their historians, from a period long before the flood." If the system has been in use in the latter country, for three or four thousand years, it is a long time. In Italy, especially on the banks of the Po, the cultivators of the earth have certainly employed this process from a period previous to the days of Virgil, as this author, and the writings of M. P. Cato, Collumella, and the elder Pliny testify. In the early part of the middle ages it was resumed in Italy, first by the monks, in their religious establishments, they monopolized all the wealth and learning of that day, and knew best the use of irrigation. The princes and chief men of Italy, especially Lombardy, patronized and followed so useful an example, in extending the employment of water in all possible directions. The waters of the chief rivers of the north of Italy, such as the Po, the Adige, the Tagliamento, and of all the minor streams, are used in irrigation. There is no other country which possesses an extent of rich water meadows equal to that of the Lombards. The entire country, from Venice to Turin, may be said to be one great water meadow. The irrigation system is not confined here to grass lands; the water is conveyed on to higher ground, where corn and the cereals are grown, into the low lands where rice is cultivated, and around the roots of vines. These last generally required a dryer soil, and will perhaps flourish with less moisture than many other plants, yet they must have a portion of it to produce clusters of the largest size, loaded with the richest fruit, and of the highest flavor. We have the records of holy writ for this. And Moses said unto his commission of twelve whom he sent to spy out the land of Canaan, "See what the land is, whether it be fat or lean, whether there be wood therein or not, be of good courage, and bring of the fruit of the land; now the time was, of the time of the first ripe grapes. And they came unto the brook Eshcol, and cut down from thence a branch with one cluster of grapes, and they bore it between two upon a staff." Most assuredly a large cluster which took two men to carry it between them on a pole. This great growth was no doubt owing, in that dry climate and soil, to the influence of the moisture of the brook Eshcol, on the banks of which these grapes grew; this moisture was felt by the vines, above and below the earth on the banks of the brook, by the roots, leaves and branches. Italy for nearly two thousand years, and to this day, produces fine grapes, her soil and climate are congenial to them. From Italy, the practice of irrigation extended into the south of France, into Spain, then into Britain. In the states of Lombardy the waters of all the rivers belonged to the state. In those of Venice the government extends its claims to that of the smallest springs, and even to collections of rain water, so highly for the use of the cultivator is water of every kind valued in the north of Italy. It is paid for by the peasants, to the state, in the shape of tax, according to the quantity used. Thanks to the wisdom and foresight of our ancestors, which are evinced in the happy form of government they framed for and left us, we are not so restricted in the use of the two essential elements, air and water. The former we can freely use as it hangs over and envelopes us in a dry or moist state, and where the rains descend from it upon our land we can freely collect and use the water as we please without paying tribute to any power for the privilege. As to the manner in which water acts to improve when flowing over land, Davy thought it was owing a good deal to the higher temperature of water while standing upon or running over land, that it kept plants warm during winter. This he ascertained by a thermometer, placed at the bottom, near the roots, when it rose ten or twelve degrees above freezing point. In general, he says, "those waters which breed the best fish are the best fitted for watering meadows, but most of the benefits of irrigation may be derived from any kind of water." Davy stood high as an agricultural chemist; no man in his day stood higher; he seems, though, from his writings, never to have thorougly investigated the chemical properties of river water, as respects its uses in irrigation. This great man was cautious, too, in giving his opinion on subjects chemically, which he had not well examined, especially if they bore any relation to his favorite one, agriculture. On this account he could have had little knowledge of the value of many of the impurities of river water to vegetation. Since Davy's time, it has been clearly shown by the best scientific and practical farmers, that the value of water depends not only on the moisture wnich it affords them, but greatly on the different foreign matters which it holds in suspension or solution. These consist of both organic and inorganic, or mineral, animal, and vegetable substances; of the former, carbonate of lime, sulphate of lime, common salt, muriate of soda, and magnesia, sulphate of soda and silica. Vegetable matters in infinite variety are continually washed or falling into streams and decaying, and carried down, mixing as they move with the other materials, and forming a rich compound and sediment, and deposited on land, make a first rate aliment for most if not all plants. On correct analyses of these last, it will be found they all yield ingredients similar to those enumerated, or most of them, and that these are the food or natural constituents of all plants, and especially the grasses. We have innumerable examples and proof of this great benefit land receives from water passing over it. Our American rivers, some of a large size, from 100 to 1,000 miles in length, deep and wide, much more so at some parts of the season than at others, but never ceasing to run and carrying down in their beds a greater or less quantity of water. These wash lands and shores of every variety and quality, they cut their way through large mountains, wash their bases on both sides and carry down in their bosoms, either in a state of solution or suspension the debris or ruins of rocks and minerals of every kind. Animal and vegetable substances of every species, land animals as well as water animals; the former are thrown or fall in, die and decay, fishes of various species, shells, &c., and all fresh water animal products. Vegetable matter of every kind grows luxuriantly upon the banks of these rivers, mature, ripen, and fall or are washed in; all are more or less thoroughly decomposed by the action of the water, mixed and intermingled and rolled down together for hundreds and in some cases for thousands of miles. Compost manures are here formed by the operations of nature, of the richest and most efficient kind for all plants that grow more perfect than fallible man could combine them and without labor or expense. Minerals, and animal and vegetable matter of every kind known perhaps in the world, broken into minute parts by the continual action of water and attrition. These are deposited on the banks and shores of great and small rivers, during their floods and make what are called the alluvial soils of the south and west. We cannot be surprised that some or most of these soils, said to be from ten to twenty feet in depth and formed of such materials, should be considered by those who have located and tilled them, as inexhaustible. Some of these rich sedimentary deposits have perhaps been thousands of years in forming, and extend from one mile to one hundred miles into the interior, from the bed or banks of the rivers, from which they were conveyed *and* accumulated. These deposits, no doubt most of them contain a sufficient quantity of that important ingredient ascertained of late to be so essential a part of the food of plants, *phosphoric acid or bone earth*; this was not in the analysis above given of water, by distinguished chemists of Europe. This was water of some of the European rivers; these are short and small compared with many of ours, and do not hold in their bosoms such a variety and quantity of mineral, animal and vegetable matter. Ours it has been observed contain all the ingredients of which *bone earth* is formed; rocks and earths of a certain kind contain it; vegetables more or less of it; animals are the great source of it, and contain it in the greatest purity, their frames cannot be built up without it. The waters of most of our rivers, it is thought, if properly analyzed would be found to contain it. Certainly the material would be found among the deposits on the various shores where they are cast. New chemical combinations would be continually going on among these where they lay imbeded, and the article would be found in sufficient quantity here.

Dr. Thompson, M. Saussure, Hassenfratz, and others, Europeans, all of great reputation in their profession, agree as to the chemical qualities of most rivers; some streams of water contain more foreign matter in quantity and variety than others and of course yield more food for plants. This depends somewhat on the soil they flow over or through, such for instance as chalk, limestone or slate soil; the more of these and especially the chalk kind they disintegrate and bear their particles in their descent, and flow over land the more it is benefited all river waters including springs contain more or less organic matter. To ascertain whether pure water alone could accomplish all the magic effects of irrigation it was necessary to employ other water than that of rivers, lakes or even springs.

These gentlemen tried pure water, as obtained by distillation and as a supporter of vegetation, but it was found totally inadequate, plants merely vegetated for a time, but could not be made to mature and perfect their seeds. Facts like this strongly confirm the conclusions of some of the most sagacious cultivators that the chief advantages of irrigation are owing to the foreign substances with which water is charged. The United States, or by far the greater part of them, situated in a considerably higher latitude than a greater part of Europe has a more powerful sun the greater part of the year, therefore it exhales moisture more rapidly from its soil. This, with other causes, subjects portions of our country to severe droughts in sections where these prevail, and some years they are extensive, no rains to be of service often for many weeks; plants suffer greatly for the want of moisture, their yield is diminished at least one quarter and sometimes one third by it on an average. If irrigation should be used among us at such a time it would mitigate the evil much; natural unfailing streams could in many places be led or conveyed on to lands and caused to flow over them gently at comparatively small expense. This would carry not only moisture, but nourishment to plants on such lands, and would probably be the means of their producing nearly or quite an average crop in the dryest season. The cost of the operation would, no doubt, be an objection with most of our farmers, as this in some cases is greater than drainage, but in most cases considerably less, and it is only a few places comparatively where the streams would offer facilities for flooding without some labor and expense. Our western and southern states possess these advantages of natural irrigation in a high degree; there large and small streams at certain seasons flood their lands without any aid from man; these periodical floodings deposite their rich sediment on their land and form what is called their alluvial soil, so highly valued as we have observed for its durable richness. In dry seasons no doubt vegetation suffers here as elsewhere, and unless they possess facilities for directing these streams on to their lands and submit to the labor and cost of it, they must sustain damage therefrom. These soils in possessing all the ingredients, organic and inorganic which plants require for their nourishment, if properly tilled will stand a drought longer and suffer less from it than soils less favored by nature. There is no necessity here for artificial flooding of their land to acquire nourishment for vegetation, for this the latter has in abundance; it is only for moisture, important undoubtedly to a certain extent for the prosperous growth of plants. If our western and southern friends possess these advantages from their rivers and streams, great and small, they occasionally pay pretty dear for them as in some seasons, these, by their violent and sudden inundations commit great destruction on their banks and the adjacent country, not only to property, but sometimes lives. Thus verifying the old adage: "That water is a good servant, but a bad master," and that there is no great good without its attendant evil.

ON THE VARIETIES AND ECONOMY OF FUEL.

It will undoubtedly be allowed that the most antique of all varieties of fuel was wood. Before countries were inhabited, most of them were covered with trees; such was certainly the fact with regard to our own country. These were chopped down to afford room for the agriculturist to commence his labors, and supplied him with necessary fuel. It makes a very cheerful and charming fire, from the fact that a bright blaze issues from it, affording not only heat, but an abundance of light. The objection to it is, that it requires constant renewing, and is expensive in its preparation, and likewise requires much room to store it on account of its bulk. Wood is made up of longitudinal fibres of extreme minuteness, with the spaces between filled up with cellular tissue, arranged to constitute the forms of stems, leaves, branches, &c., for the juices to flow through; wood is composed of oxygen, carbon and hydrogen, they are separated by burning, and constitute combustion; forming light carbonated hydrogen, this being ignited constitutes what we call flame. Dense woods give the greatest proportion of heat, and burn much longer than other kinds. Among these may be named hickory, oak, birch, hazel. Among the soft kinds are linden, willow, larch, poplar

These all throw out heat in proportion to the quantity of carbon they contain. The dry woods yield a far greater proportion of heat than the wet woods; they contain one third of their weight in water. One pint of water in a stick of unseasoned wood placed on a fire, forms seventeen hundred pints of vapor, which carries the heat expended in its formation up the flue. Recently cut wood contains from 30 to 50 per cent of water, for example, fir holds 44 per cent, pine 40 per cent, beech 39 per cent, birch 29, oak 36, and even when dry, most wood contains 9 or 10 per cent of moisture. Trees that have matured themselves without showing signs of decay, say that have reached 120 years, are much better than trees sixty years old for fuel, decaying trees are of little value for burning, any wood burned in a close stove will give one third more heat, than that burned in an open fire place, for the reason that in an open fire place the heat radiates, and is dissipated by coming in contact with the atmospheric influence; which cannot be the case in a close stove, where it can be perfectly managed with a proper damper.

Charcoal from possessing singular properties, is very valuable as fuel; it is the carbon of wood, or that which is left after the hydrogen or oxygen are driven off by burning; the carbon not being so combustible as hydrogen requires more atmospheric air to ignite it; this not being allowed by the manufacturer, it remains in its original position, and contains, in one inch square, nearly six million of pores. When used as fuel, atmospheric air is freely admitted, it burns readily and gives out a great deal of heat; forming carbonic acid gas, which soon fills small, badly ventilated apartments, causing death by suffocation to those exposed to its pernicious qualities. The ashes contain lime, silex, potash, &c., all of which are valuable adjuncts to the agriculturist. Flame is not emitted by burning charcoal, from the fact that the hydrogen was dissipated by the first burning; and it is that which causes flame from the combustion of wood. The diamond is supposed to be crystallized carbon. It is not known whether black is the natural color of the element, carbon, or not. The best charcoal for commercial purposes is made of soft wood, such as willow, &c., which is used for the manufacture of gun powder, crayons and polishing, but for fuel the hard wood charcoal is the most sought after, made from oak, birch, and the like woods. It gives a very strong heat, burns in any part of a house, and is particularly useful in culinary departments; it is expensive for the reason that it requires constant renewal.

I cannot leave this subject, charcoal, without mentioning other valuable properties contained in it. It is indestructible, and will preserve animal substances a long time from decay, by absorbing the putrid gases that naturally arise from them; its use in medicine is valuable; it makes a capital tooth powder, and in 1830 I discovered that there is no article used as a manure, more valuable in agriculture, than pulverised charcoal, as it enters into the composition of all the vegetable kingdom, in the form of carbon. I have proved by experiment that all plants will grow in it in a pure state. 40 per cent of sugar, 44 per cent of the starch of wheat, 53 per cent of oak wood is pure carbon. In the gaseous form it is found abundantly in water, earth and air. It will free liquors passing through it of their empyreumatic flavor, and likewise deprive them of color. It is a nonconductor, and is often used to confine heat. Carbon combines with oxygen in two proportions, forming carbonic oxyde and carbonic acid.

Of all the fuel now known, or made use of in the wide world, coal takes the precedence and stands first. It is found usually deep in the bowels of the earth, and is raised by mining operations of various and complicated kinds; it is supposed to have originated from immense deposits of vegetable substances, which, by the compression of superincumbent masses of earth, aided by water, has become consolidated carbonic acid gas. It comes to us under a variety of names, such as bituminous, cannel, anthracite, &c. Of all the varieties the cannel is the cleanest, as it does not soil the hands, burns freely and emits a bright light, from which fact it derives its name. Cannel is pronounced in the north of England candle coal; as it answers as well for light as heat.

Anthracite differs entirely from all other varieties of coal from the fact that it is entirely carbon and devoid of hydrogen gas; it therefore emits neither smoke, flame or gas. It breaks smooth and presents a shining surface. It resembles cannel from the fact that it does not soil the hands when they come in contact with it. Charcoal or some other foreign matter is required to kindle it.

Coke is coal deprived of hydrogen, therefore it emits neither smoke or flame. It is made much in the same manner that charcoal is, by covering heaps of coal with earth and igniting the mass, thus driving off the hydrogen without consuming the carbonaceous parts of the coal. Coke makes an excessively hot fire, but leaves a very large quantity of ashes behind.

Peat, or turf, is much employed in Ireland or Scotland among the lower classes as fuel. It is not capable of producing a very intense heat on account of its bulky and spongy texture. There are kinds that are free from this fault; still, all the varieties produce a strong, odorous, unpleasant smoke, which immediately affects the eyes, causing them to water and feel unpleasant to their owners; it can, however, be charred before it is stowed away for consumption. So prepared it will not smoke and is free from all disagreeable sulphureous vapors, emitting no smell.

In Germany and Flanders, when coal is scarce, they pound it fine and mix it with clay, half and half, partially diluted with water and kneaded until a thick mass is formed, which is made into cakes and dried. These cakes burn for a long time and give much heat.

When the inhabitants of a country are too poor to burn coal or peat, they make use of cow dung for that purpose; this substance, when thoroughly dried, burns slowly and makes a very hot fire. The Egyptians, Persians and Arabians use camel's dung mixed with straw, mud, &c., for the same purpose. The following table showing the quantity of heat that may be obtained from several varieties of fuel, will be found in Dr. Meredith Reese's Encyclopedia of Domestic Economy. To it I am indebted for much useful information, and which should be possessed by every gentleman.

One pound of	Melts of ice,
Good coal,	90 lbs.
Coke,	84 "
Charcoal of wood,	95 "
Wood,	32 "
Peat,	19 "
Hydrogen gas,	370 "
Carbonated hydrogen,	85 "
Olive oil,	120 "
Wax,	110 "
Tallow,	105 "
Sulphur,	25 "

It is indispensably necessary that fuel of all kinds should be kept perfectly dry until required for use, as most kinds absorb moisture rapidly and consequently consume much time when burning, converting this moisture into vapor, which carries the heat up the flues instead of disseminating it through the apartment.

P.

MILCH COWS.

BY S. VAN WYCK.

We have been requested of late by many gentlemen members of the American Institute, and Farmer's Club attached to it, and others, to furnish a table or list for the next *transactions* of the best American and English milch cows within the last fifty years known. These to be collected from the best records of the two countries. We have endeavored to comply with the request as well as we were able, such lists have been given at various periods as the cows made their appearance, and must be searched for in various volumes that treat on the subject, to ascertain some particulars of their history and qualities. We believe it was meant to have this information condensed in as small a compass as possible, that it might be embraced by the mind at once without much time spent in perusing the article itself, or search in many volumes for the facts they contain. We have also given the average produce in milk, butter and cheese, of the best farm dairies of the two countries.

	American Native cows.	British cows.	Milk for the season.	Butter for the season.	Cheese.	Remarks.
Oakes cow, Danvers, Mass.,	Oakes,		3,300 qts.	485 lbs.		A day 20 to 30 quarts—the greatest 35 quarts. Facts from owner.
Cream pot breed, Mass.,	Cream Pot,		2,000 "	400 "		Cream 80 parts pure butter. Owner's facts. Milk as to quantity not great.
Greenfield, Mass., 1830,	Greenfield,		2,400 "	420 "		
Dorchester, "	Dorchester,		2,300 "	395 "		
North Adams, "	North Adams		2,650 "	425 "		
Shelburn, Vermont,	Shelburn,		3,010 "	375 "		Facts from owner.
Springfield, Mass.,	S. cow,		2,900 "	350 "		Facts from owner.
" "	" "		2,750 "	312 "		
Several cows in Dutchess and Westchester Co., N. Y., Connecticut, average,			2,800 "	325 "		
Cow in Ontario county, of Geo. Kier	Kier's cow,		2,800 "	420 "		Owner's facts.
Oneida county, Mr. Comstock's,	Comstock's "		2,550 "	400 "		Owner's facts.
Madison county. Chas. D. Miller,	Miller's "		2,850 "	400 "		
Cramp cow, England,		Cramp cow,	5,360 "	594 "		Owner's facts.
Alderney cow, "		Alderney "	1,680 "	300 "		Great for richness of milk.
Durham " "		Durham "	2,700 "	350 "		Average of the best.
Ayrshire " "		Ayrshire "	1,640 "	270 "		In quality nearly equal to Alderney.
Average of the best American dairies,			1,670 "	207 "	425 lbs.	
Charles A. Kilham, Wareham, Mass.,			1,367 "			Quite common native cows, but well kept. Facts from owner. 1850.
Average of the best British dairies,			1,700 "	210 "	450 "	
Individual British cows best for cheese,					600 "	Owner's facts.
Individual American " " " "			1,670 "	207 "	625 "	Individual and dairies, average butter 425 lbs. Owner's facts.

In making out the above table we found rather more difficulty than we expected when we undertook it. This was principally owing to the great number of American and British authorities we had to consult for facts and data to make the calculations upon. This was not all according to the plan we adopted in embracing the whole year for the products, we had to compute these from the daily, weekly, and monthly produce, as, in a very few cases only were the former put down; most of them were confined to the latter; and where the yearly products were put down, in almost every case, the daily, weekly, and monthly, were the data on which the annual were made, and not from actual fact. This was from necessity, as in not more than two or three cases out of the great number in the books, was the quantity for the year based upon actual fact. Computation had to be resorted to, and allowances made. All cows give more milk at one season than another, and this during grass. After August there is generally a great falling off. Some cows' milk is much richer than others, almost as rich again,—considerably less, though, in quantity. Indeed, the same cow's milk often differs in richness, for all which allowances must be made, and thus the annual quantity made up. Men often differ in their rules of taking averages, and making allowances, or may err in computing the quantity. Hence contradictions in the books, all done too with the best intentions of coming at the truth. In making out our table we have been obliged to adopt a similar course, and may have made mistakes, and most probably have; at any rate we have meant to do what was right. We will give the titles of some of the numerous books we have consulted on the occasion, and refer those who differ from us in opinion, to them, to examine for themselves, and thus far aid them in setting us right if we are wrong.

American authorities.—Colman's works; Transactions of State Agricultural Society, and American Institute; American edition of the Farmer's Encyclopedia, with valuable additions.

British authorities.—Scotch Encyclopedias, under the heads Butter and Daries; Farmer's Library; Stephens' latest work on the Farm; Doyle's Practical Husbandry.

To show how mistakes occur in these matters, in the case of the Cramp cow, (England,) where no calculation of moment was necessary. The owner, Mr. Cramp, Lewes, Sussex Co., made a statement, for public use, of her products for one year, in milk and butter, daily and weekly, and published it as his This account we found in the British work last cited, and is the one adopted in our table. It differs somewhat from several other accounts, and the most considerable difference, we believe, made it above 400 quarts of milk more, and nearly 100 lbs. of butter, than Mr. Cramps' statement. There are several states south and west of us, not here cited, that have, no doubt, at different times produced individual cows and herds of cows, whose produce in milk, butter and cheese, have been nearly or quite equal to the states or sections of states named.

A NEW ENEMY TO INDIAN CORN.

Pelham, *Westchester Co.*, *Oct.*, 9, 1851.

Gen. A. Chandler:

Sir—The accompanying ears of corn were taken from the western part of a field of corn in this town, of which about one-third of the ears have been stripped of their kernels. The field presented the appearance of the ears having been husked on the stalks, which had been topped some ten days previous. On examination it was found that the husks had been stripped and the kernels eaten by insects, specimens of which are in the box herewith sent.

As far as my knowledge extends it is a new species of insect, or rather a new enemy to the most important of our agricultural productions. By referring these specimens to a committee of your Agricultural Board, a better knowledge of the insect may be obtained and a mode suggested for the prevention of its most serious depredations.

Very Respectfully Yours,

PH. SCHUYLER.

The insects forwarded by Mr. Schuyler, are of the Coleopterous order, about one-quarter of an inch in length; the first, or upper pair of wings are of a semi-transparent straw colour, with six oblong spots of a dark brown on each sheath, making twelve in all, placed longitudiually. This is the first instance that has come within our knowledge of an attack on Indian corn by insects of this species. The specimens will be disposed of as requested by Mr. Schuyler. A. C.

TEA FROM BRAZIL.

Luis H. F. d'Aguiar, Esq., Consul General from Brazil, presented at the rooms of the Institute, specimens of Brazilian Tea for examination. It was denominated as hyson; young hyson; gunpowder; hyson skin; and black tea Specimens of this tea, amounting to about forty, were distributed at the Farmers' Club, with a request that those who tried it would express an opinion as to its quality. Returns have been received from twenty, in which there is a general concurrence as to the black, that it is *very good.* Of the other specimens the opinions are various, generally admitting it to be of fair quality, but inferior to Chinese.

We are indebted to the polite attention of Mr. d'Aguiar, for various contributions to our library, among which are a series of publications by the Auxiliary Society of National Industry, at Rio de Janeiro, andM ercantile and Industrial Almanac of Brazil for 1851, 12mo. 700 pages. A C.

JOHN R. ST. JOHN'S VARIATION COMPASS AND VELOCIMETER.

This instrument was awarded a gold medal by the American Institute in 1849, and has since received a prize medal at the great exhibition, London.

Mr. St. John's improvement consists in placing two small needles upon pins equi-distant from and at right angles to the centre of the main needle. These small needles have brass arms or pointers fastened to them, which reach inward toward the centre of the main needle, and move over semi-circular graduated scales. These scales are graduated both ways from their centres outward, the nonius being in the centres.

The three needles are so charged and constituted to each other, that when the main needle points in the magnetic meridian, the pointers stand on the nonius of their respective scales. But when the main needle is moved from the magnetic meridian by any course, either to the east or the west, the pointers will assume positions on the scales toward the letters at their extremities, either E. or W., these letters indicating the character of the deflection, and the figures over which they stand being added together and then halved, give the amount.

This instrument shows promptly and actually the effect of all local causes, whether magnetic or mechanical forces, in carrying the main needle from the magnetic meridian.

Mr. St. Johns' Velocimeter consists of a frame made to rise and fall at pleasure, in a pipe inserted through the bottom of a ship, in which the water runs equal to the draft of the vessel. This movable frame covers a spiral wheel, which, dropping below the bottom of the vessel, is made to revolve by the motion of the vessel through the water. The revolutions of this wheel are carried by shafts and wheels up to a train of groovings in the upper part of the vessel, covered by a dial over which the hands revolve, one of which goes round once in one mile; the next goes round once in one hundred miles; and the third goes round once in one thousand miles. This instrument, under test at the Washington navy yard, has been certified as an accurate measurer of the velocity of the ship at any time and the true distance traversed.

PLUMBAGO AND FELDSPAR OF MORRIS CO, NEW-JERSEY.

AMERICAN INSTITUTE,
New-York, Jan., 1852.

WM. A. BRADLEY, Esq.:

My Dear Sir.—Understanding that you have recently devoted some portion of your time to the investigation of certain soils in Morris county, New-Jersey, said to possess unusual fertility, resulting, as is supposed, from a natural admixture of mineral substances; I take the liberty of soliciting, should your time permit, such information relative thereto as you may think proper to place in the hands of your friends in the American Institute.

Very respectfully, yours, &c.,
ADONIRAM CHANDLER.
Corresponding Secretary.

NEWARK, *January* 23, 1852.

GENERAL CHANDLER:

Dear Sir—Your letter was duly received, and it would have afforded me much pleasure to have replied at an earlier date had I been able. The subject mentioned by you is one of which I know but very little, and the weather has been so severe that I have been unable to visit the localities in question for the purpose of obtaining further statistics. The few facts which have fallen under my observation I am most happy to place at your disposal.

The excellent qualities possessed by the soil of a certain tract of land in Morris county, New Jersey, have for a long time been a common subject of remark with practical men and others familiar with the locality. These soils seem to possess the most essential qualities desirable to farmers in an eminent degree, so much so that farms situated within this tract will command a much higher price than others not so located; in some instances these naturally fertile soils have obtained double the price of the more ordinary land in the immediate neighborhood.

Although these facts have long been known to those living in that section of country, yet the probable cause of this unusual fertility have only recently been explained. It appears to be owing to the cropping out of a vein of plumbago or plumbaginous feldspar throughout the whole extent of the fertile tract by the gradual disintegration and decomposition of which the soil has been formed. This soil is quite light and easy of tillage, and when moist, is of a deep black color. It will in many places produce, without the application of manure, crops fully equal if not superior to those raised on manured land only a short distance beyond the limits of the vein, and possesses the power of withstanding, in a remarkable degree, the exhausting effect of long continued and heavy cropping, receiving in the meanwhile only scanty supplies of manure. When applied in any considerable quantities, manures are found to act with great energy, seemingly stimulating vegetation to an unusual degree.

These phenomena, occurring as they do only at isolated points, and only in connection with the outcrops of this and similar veins of plumbago and feldspar, are manifestly owing to some peculiarity in this soil derived from the subjacent materials. The veins in which the mingled minerals occur are of varied extent and richness, and the included plumbago generally of the granular variety. Often the entire vein is composed of nearly pure plumbago, with only a few nodules of the feldspar disseminated throughout; in other cases the feldspar predominates and sometimes almost entirely displaces the plumbago. The proper position of these veins is among the primary rocks in Morris county, generally in granite and gneiss. Although they may occur among the newer formations, their line of direction is from the northeast to the southwest, and their extent is from a few inches to nearly a mile in width.

This peculiar combination of plumbago and feldspar is found to decompose very readily under the influence of the various atmospheric agencies. This readiness to decompose seems to be owing more to the feldspar than to the plumbago, as it is observed that where there is little or no feldspar present, there the action of frost, rain and other aids to decomposition has been productive of little or no effect, while at other points where the decomposition is far advanced, the two minerals are found in more nearly equal proportions.

Feldspar, it is well known, is a mineral very prone to decomposition, as in the case of those varieties affording the kaolin and other clays used in the manufacture of porcelain. In the present instance the feldspar decomposes first and, by its decay, sets free the plumbago, rendering it more or less porous, so that the frost and rain more easily crumble it to a gravel, more or less fine in proportion to the original quantity of the feldspathic cement. This gravel, by a continuance of the same process, becomes the dark colored and highly productive soil, the peculiar properties of which have been already noted.

These facts possess a much higher interest, when we consider in connection with their practical value, the chemical principles which have combined to produce the effects noticed:

Plumbago or Graphite (as it is often termed) consists mainly of carbon, with a variable quanity of Iron, with which it is supposed to be mechanically combined; when crystalized it is nearly pure carbon, in a very compact state, it is quite infusible whence its value as a material for the manufacture of crucibles and other utensils destined to support a high temperature, although it may be burned provided the air have free access. Its composition as found by analysis is as follows:

Carbon,	94.4
Oxide of iron,	1.4
Silica,	2.6

With variable proportions of water, it may however, be practically considered as carbon, the other ingredients being scarcely in sufficient quantity to produce any sensible effect in the soil. This carbon as first liberated by the gradual decomposition of the beds of plumbago is, owing to its compact state, quite insoluble, and until the processes of decomposition shall have reduced it to a very fine state of division, it may be said to be quite inert in the soil, or to have at least only a mechanical action, as a loosener, making the soil lighter and more pulverulent, and rendering it more absorbtive of heat and light. As soon however as sufficiently fine, it begins to develope itself as carbon in a new series of actions, it absorbs and retains the ammoniacal and other gases, resident in the atmosphere in contact with it, and brought down by the showers holding them in solution, once in the soil they are retained by the carbon, with a power which yields in intensity, only to the energy of a growing plant, at the same time by the combined action of heat, air and moisture, a portion of it receives oxygen from the atmosphere and becomes carbonic acid, which is condensed and absorbed by the remaining carbon, until required by the plants growing upon it The extent and rapidity with which these actions take place is only directed by the degree of fineness to which the carbon is reduced, and its action as an active manure is also in the same proportion.

The more perfect the mechanical division, the more rapid and energetic will be its chemical action. A further advantage arising from the presence of carbon in any form in the soil, is its property of absorbing both heat and light, rendering the soil warmer and more stimulating to the growing powers of plants. Heat and light are both powerful incentives to chemical action as the whole history of chemical science will teach, and it is most of all evident in the chemistry of organized bodies; the influence of heat and light seems to be essential to the life and proper growth of plants; nor are their effects merely confined to those portions of the plant above the surface of the soil; it is highly probable that their action upon those parts beneath the surface may be quite as important. The lives of plants are but a series of the most complicated and interesting chemical actions, all of which are more or less powerfully controlled by these two agents, light and heat, hence the value of any substance calculated to enable the soil to retain these highly important stimulants. All practical men know the value of a warm soil, and to such the value of a means of correcting the opposite property will be at once apparent; plumbago of all other means, seems from its powerfully blackening properties best calculated to produce this so highly desirable result; a very small proportion is sufficient to perceptibly darken the color of the soil, and in a corresponding degree to increase its power of absorbing light and heat.

The great value of graphite in this and many other respects, should prove an inducement to farmers residing near localities of it, to use it on their farms; it is found at various points throughout the whole granite and gneiss region of New-Jersey, and at many other localities in districts of a primitive structure. It also occurs frequently in connection with veins and beds of serpentine and other rocks of similar origin and character. Whenever it can be obtained at a moderate cost, its effects will not fail to repay the outlay, since, when finely ground, its value as a divisor for manures, would not be far below that assigned to charred peat, charcoal dust, &c., for all these purposes it would require to be reduced to fine powder.

The feldspar, also, is in many respects a highly useful mineral; it is an essential ingredient of common granite, and always occurs with it in greater or less abundance. According to Rose, it consists of,

Silica,	66
Alumina,	18
Potash,	14
Lime,	1
Oxide of iron,	1
	100

Several varieties of this mineral are known to collectors; of these, that known as potash feldspar, (the composition of which is given above,) is by far the most abundant. This mineral takes its specific name from the potash, which enters so largely into its composition; it is thus called in order to distinguish it from the soda feldspar, in which the potash is wholly or for the most part replaced by soda, to the first of these divisions, the potash feldspar belongs he mineral occurring with the plumbago of Morris county. These feldspars owe their ready disintegration as much to a species of chemical decomposition, as to the erosive action of moisture and changes of temperature. Feldspars consist of a combination of silicate of alumina, with the silicate of either potash or soda; these latter silicates are decomposed with varying rapidity by the carbonic acid of the atmosphere, forming in the place of an insoluble silicate of potash, a very soluble carbonate of the same base; the silica thus set free by the dissolving out of the bases, is readily washed away by the rains, together with the insoluble silicate of alumina, forming that well known substance, clay. The proportion of silica and alumina is very near that required to form a soil suitable for cultivation, but the chief excellence consists in the large percentage of potash which it must contain.

To add anything in this connection with respect to the importance of potash, or any material containing it in large quantities, is, I trust, at the present day, superfluous; its beneficial effects have long been seen by all those acquainted with the astonishing effects produced by the contents of the green sand deposites in Monmouth county, if judiciously applied. These effects it is now admitted beyond a possibility of question are owing to the potash contained in the green mineral.

The usefulness of this feldspar, judging from the results of analysis, promises fully to equal that of the green sand, its proportion of potash is in many cases larger, the green sand containing in the average specimens, but six or eight per cent. of alkali, while the feldspar rarely contains less than ten per cent. The decomposition of the feldspar is also quite as rapid and complete as that of the green sand, and its abundance is equal to supplying the largest demand. It is also highly probable from the result obtained by Fownes and others, that these minerals also contain a minute proportion of phosphoric acid, which, although making but a small figure in the analysis, would still be of incalculable benefit in a soil. In the feldspar from the northwest parts of the State, in the vicinity of the beds of mineral phosphates of lime of Sussex county, it is probable that the percentage will be much larger. The phosphate of lime occurs almost uniformly associated with feldspar, and those portions of the vein consisting largely of the latter mineral, still contain much phosphate of lime, and it would seem as if the feldspar from this locality, must be admirably calculated to supply the wants of soils deficient in the two important elements, phosphoric acid and potash, these elements occurring as they do, already combined, and requiring only to be pulverized and applied to the soil to produce their appropriate results.

To those persons, therefore, who from residing at a distance have not been able to avail themselves of its beneficial effects, these beds of feldspar cannot fail to prove of the highest value, combining as they do in one mineral so many desirable quantities, being at the same time an absorbent from its plumbago, and a stimulant from its potash and phosphoric acid.

In using this or any other highly alkaline manure, farmers should take care to see that their lands are well provided with a supply of organic matter, else the soil will speedily be impoverished rather than benefited by the highly stimulating properties of the potash, organic matter must be present in large quantity for the potash to expend its energies upon; where the plumbago exists with it, to a certain degree it will supply the deficiency. There will still, however, be a lack of nitrogenous matter, which must be supplied if we would succeed. In cases where the plumbago is wanting, there the contents of the peat swamps must be composted with the calcined and pulverized mineral, and after that it has expended its caustic powers in decomposing the muck, then it may safely be applied to the soil, and good results be expected.

WM. H. BRADLEY, *Newark.*

Gen. Adoniram Chandler, *American Institute.*

FOUNDATION OF THE FRENCH MERINOS.

The following is a translation of a letter from Mons. Gilbert to S. W. Jewett, of Vermont.

My father was born a farmer, and busied himself in his youth in breeding sheep.

In 1786 the Queen of Spain made a present to the King of France, of a flock of Merino ewes and rams, selected from the best blood in that country. This flock were equally divided, and one-half were placed at Rambouillet, where they have always remained; the other half were presented by the King to a proprietor, M. de Chauorier, who placed them on his farm at Croissy, four leagues from Paris. My father was twenty-seven years of age at this date; he visited the flock soon after its arrival, and each succeeding year, to satisfy himself in regard to the acclimation of the flock, and to compare the produce of wool and flesh with the native breeds. After satisfying himself that our climate agreed with this fine wooled race, and that they offered a greater inducement and advantage from the extra product of wool, as well as their flesh, compared with the then existing flocks of France, he purchased a buck and eight ewes at Croissy, in 1800, at the first sale. The ram was four years old, weighed one hundred and twenty-four pounds,* and carried twelve pounds of wool; the ewes averaged nine pounds in its pure unwashed state. He bought yearly from two to four sheep, until 1810; in 1811, fifty ewes and five ram lambs. In 1818 the whole flock of Croissy were sold, fifty-five of the ewes to my father, who paid on average from 120 to 300 francs. At Croissy the pasturage and hay was of a better quality, and more suitable for sheep than at Rambouillet. The sheep were superior, and for this reason, my father made all of his purchases at Croissy.

In 1821, he bought one ram at Rambouillet. Notwithstanding these two flocks were of the same family, he obtained a great advantage in alliance of blood, as there had been a complete separation for 35 years; up to 1827 be bought five rams from this branch, at this date, ceded to me his flock, which numbered two hundred and nine ewes of three years and upwards, and one hundred and seventy-six ewes one and two years old, and ninety yearling rams. In 1832 I bought fifty-five ewes at the public sale at Rambouillet, and since then have bought a few ewes and two rams to mix the blood with my flock, always choosing my reproductors among those which carried the greatest quantity of wool of the best quality. By this means I have increased the fleece upon my whole flock. The ewes, many of them, yielding eighteen pounds,† and the rams twenty-four pounds. Our common practice has been to use no ram till well matured, say two years old, and not allow the ewes to drop any lambs till three years old. We have thus improved the form and size of our flock, which inherit a stronger constitution.

---

* One hundred and thirty-eight pounds English.

† Twenty and twenty-seven pounds English.

No American gentleman visited us previous to the 11th May, 1846. We then had the pleasure of seeing Mr. J. A. Taintor, of Connecticut, to whom I sold two rams and seven ewes. Since then I have yearly made shipments of a few bucks and ewes to Mr. Taintor, who has made my sheep prosper in the States as they do in France. I have also had the satisfaction of receiving a visit from Mr. Isaac de Forrest, of New-York, Mr. Sanford of Orwell, and Mr. S. W. Jewett, of Middlebury, Vermont. The latter purchased of me, in 1851, eighty-two ewes and eighteen bucks. In 1852, I sold him ninety-four ewes, and to deliver in 1853, I have sold him ninety ewes. I have also had a visit from Mr. Howard and Mr. Parker, of Ohio, to whom I was not able to sell any sheep this year or next, to their great regret.

From the various essays made by my father to ameliorate the Merino race, and those which I have continued to effect on the same principles, we arrived at this conclusion, that in order to improve the breed it was necessary to let them graze on good land, preferring dry to wet, and renew the blood of his flock every five or six years. If a longer time expires before you renew the blood, you can maintain the flock in the same quality, but you cannot improve it.

Before the ewes are fleeced, I assort and separate into as many lots as I have rams, and avoid using rams with any defect, to ewes of the same defect. It is with these means, put in good practice for many generations, that we have obtained the amelioration of our flock.

It was only in 1844 that I decided upon letting my flock compete with others for the prize. Upon this occasion, the Agricultural Assembly of Paris, appointed a commission to visit the best flocks of the country. After the commissioners made their report, the Minister of Agriculture awarded me the great medal of gold.

The agricultural exhibition for 1845 took place at Grignon. I sent there three hundred and fifty ewes and four bucks. The first prize was given me and my father, then eighty-six years old, who received it at the hands of the Duke of Nemours, conducted there by his two sons.

The great general exhibition which took place at Versailles in 1851, I and my colleague, Monsieur Cugnot, sent there, each of us, three rams; the first prize was granted to us.

VICTOR GILBERT.

Windeville, Commune de Crespieres Seine et Loire, April 7, 1852.

DEATH OF CHAS. HENRY HALL.

At a special meeting of the American Institute, held January 15, 1852, at the rooms of the American Institute, No. 351 Broadway:

Mr. Nash, announced to the meeting the late decease of Charles Henry Hall, Esq., at his mansion house at Harlem, in this city, and moved that on this subject, a committee should be appointed to prepare resolutions expressive of the sentiments and feelings of the members of the American Institute on this melancholy occasion.

The Institute thereupon appointed Messrs. Alanson Nash, Ralph Lockwood and John A. Bunting, said committee; and the said committee presented the following preamble and resolutions, relative to their deceased friend and brother.

PREAMBLE.

During the month of January 1852, the American Institute has been deprived of one of its most distinguished and intelligent members.

Mr. Charles Henry Hall, became a member of the American Institute in the year 1835. He was a gentleman of enlightened and elevated sentiments possessed of great mental endowments, and his experience in mercantile knowledge has been rarely excelled. He visited in early life most of the European countries, and was engaged in extensive mercantile operations in England, Portugal, Spain, and in various parts on the Mediterranean. He returned at a later period to the United States, and became associated with one of the largest houses in this country, carrying on the China and north-west trade, from the port of New-York. His agricultural information and knowledge, which he had acquired by his intercourse, social and commercial, were invaluable to the American Institute and the public, and while living he freely communicated to the Institute for its volumes of transactions, his extensive knowledge and experience on this or any other subjects.

He had been an alderman of this city for some years, and a member of the State Legislature, while the introduction of the Croton water was a subject of discussion among the people of our city and State. Mr. Hall was one of the earliest and most ardent friends and advocate of this unparalleled improvement. By his travels in Europe, he became acquainted with the system of making roads, and public highways on the macadamised principle. It was owing mostly to his intelligence and efforts that the avenues of this Island were graded and macadamized.

He was an early friend and mover in the Harlem railroad, and its extension to Albany. And the great improvements now making beyond Harlem river, were the projects of his active mind. Few men have left behind them stronger proofs of intelligent and useful enterprize, or higher claims of public respect and gratitude.

We feel a just pride in the attainments of our distinguished fellow member and brother of the American Institute. His several qualities and amiable deportment in private life, endearing him to his friends and acquaintances, and to us his associates in the Institute. This occasion is a fit and proper one for his bereaved friends and the members of the Institute to give utterance to their unfeigned sorrow, and to testify their respect for the memory of the deceased.

Resolutions.

Resolved, That we hold in high estimation the intelligence, the integrity, the services and the civic and private virtues of the late Charles Henry Hall, and deeply deplore the loss which we and the public have sustained by the death of one so eminently a friend and useful member of our Association.

Resolved, That we sympathize with his bereaved family in their affliction, who mourn the loss of an affectionate husband, a kind parent and an intelligent and enterprising citizen.

Rvsolved, That from the respect to the memory of him who was in life so useful and intelligent a member, we direct that these resolution and preamble be entered upon the records of the American Institute and published in the transactions of the same, and that they also be communicated to the family of the deceased, by the presiding officer of this meeting, and authenticated by the Secretary of the Institute.

All of which is respectfully submitted,

ALANSON NASH,
JOHN A. BUNTING,
RALPH LOCKWOOD.
Committee.

New-York, *Feb.*, 5, 1852.

The report was unanimously adopted.

OPENING ADDRESS

At the Twenty-fourth Annual Fair of the American Institute, at Castle Garden, October, 1851.

[BY LIVINGSTON LIVINGSTON, ESQ., VICE PRESIDENT.]

LADIES AND GENTLEMEN:—On behalf of the managers of the Twenty-fourth Annual Fair of the American Institute, I bid you welcome—a hearty welcome—for there cannot be any one in this vast assemblage who does not feel proud and rejoice at the present exhibition, surrounded as he is on all sides by specimens of the skill, energy, and enterprise of our citizens—tokens of our country's glory and prosperity.

The great object of the American Institute is to encourage and promote the domestic industry of our country in all its branches, in agriculture, commerce, manufactures, and the arts; by holding fairs for the exhibition of the products of the soil, specimens of manufactures and the mechanic arts, and by bestowing premiums and rewards on those who shall have made improvements or excelled in any of those branches.

What success the Institute has met with in its arduous undertaking, after twenty-four years' labor, it is not for me to speak; that must be left for your decision.

The first Fair of the American Institute was held in the year 1828, at Masonic Hall in this city, in a room of about one hundred feet long by fifty wide, and at the time, so doubtful was the experiment, and so low was the pecuniary credit of the Institute, that the managers were compelled to pledge themselves to pay the expenses, and it was with considerable difficulty that a sufficient number of specimens of American industry and ingenuity could be collected together to make a respectable show even in that limited space; but thanks to the progress made by our manufacturers, our artisans, our mechanics, and our agriculturists, we are now enabled to fill this immense building with an almost endless variety.

In the Machine-room are exhibited steam engines, machines for planing, spinning cotton, &c.; and in the floral and agricultural department, elegant specimens of fruits, flowers, and vegetables.

The specimens of pianos, tapestry carpeting, cloths, shawls, hardware, silverware and glass, almost defy competition. There are numerous other beautiful specimens of American skill which cannot be enumerated in this short address, but which will amply repay the trouble of a careful examination.

To show the progress of the Institute let us examine the receipts and expenditures of the Fair held last year, and contrast them with those of 1835. In the year 1835, the receipts were $5,156.70, and the expenditures $3,005.14. The managers then awarded as premiums sixteen gold medals and ninety-one silver medals, valued at $905.40.

In 1850 the receipts were $21,955.17, being four times greater than the receipts of 1835. The expenditures were $14,694.51, nearly five times greater than 1835, and the premiums awarded were ninety-two gold medals, eighty-five silver cups, and three hundred and twenty-six silver medals, amounting in value to $3,527.09, about four times the value of those awarded in 1835.

The value of the premiums awarded last year amounted to five hundred dollars more than the total expenses of the Fair of 1835.

It has been charged against the Institute, and most unjustly, that gold and silver medals were awarded to exhibitors only nominally, and that they were not furnished except at the expense of the exhibitor. Such may possibly have been the fact at one or two of the early Fairs, when the receipts barely paid the expenses; but from the year 1835 to 1850, inclusive, the money expended for gold and silver medals awarded by the managers, and actually delivered to exhibitors, has amounted to over $25,000.

The Institute has increased in its receipts, expenditures, contributors and visitors, in all and every thing except the price of admission to the Fairs, which has invariably been twenty-five cents. The receipts show that the Fair of 1835 was visited by about 22,000 persons who paid for their admission tickets, and the Fair of last year by 88,000, and if we include those admitted on free tickets, to wit: members and their families, exhibitors and invited guests, we may safely say that the last exhibition was seen and examined by over 300,000 persons.

What greater facility can be afforded to the honest and hard-working mechanics and artisans for the display of their skill and ingenuity?

As the public have contributed each year more than the expenses of the Fair, it may be asked by them, what has become of the surplus? The managers pay the same over yearly to the Treasurer of the Institute. The accumulations, after paying salaries of agents, secretaries, clerks, librarian, and other incidental expenses in 1849, amounted to about $15,000, and the Institute then purchased the large brown stone building, No. 351 Broadway, for the sum of $45,000, on which they now owe only $20,000, and which, in a few years, they hope to pay off by the continued patronage of the public.

The second story is occupied by the Institute as a place for meetings, and as an office for the agent and other officers of the Institute; the third story as a reading-room and library, which is handsomely fitted up for that purpose; the library contains 5,860 volumes, among which are many rare and valuable works; and the fourth story is occupied as a model room. The first floor and basement are leased at an annual rent of $3,000.

Since the close of our last fair, the manufacturers, artizans, and mechanics of the Old World have had an opportunity of displaying their skill and ingenuity at the World's Fair. It could hardly be expected that our manufacturers and mechanics should enter into competition in those articles which are most calculated to make a gorgeous display; and at first it was thought that the Americans might as well have kept their contributions on this side of the Atlantic, yet our Yankee notions have, on inspection, turned out better than we could have expected.

While the operatives of France and England were perfecting themselves in the manufacture of silks, satins, velvets, and other articles of luxury, in what have the operatives of America been engaged? why have they not been busy preparing for the struggle—engaging for the mastery in the competition which was to be held at the Crystal Palace? why have they not there made a display equal to that of France and England? The answer is easy, plain, and apparent; they have been more busy in the useful and practical than the ornamental; their works have been on too grand a scale, and too permanent in their character, to be transported across the Atlantic; no room could be found for them in the Crystal Palace. While the operatives of the Old World have been becoming expert in the articles of fancy and finery, ours have been building the Erie canal—the Croton Aqueduct—connecting all the States of our glorious Union, with iron bands, enabling our citizens to travel from one end of the nation to the other with almost incredible velocity, and spreading a net work of wires in the air, (the railroad of the mind,) by which intercommunication of thought can be had with all parts of the Union with lightning speed—annihilating space. We have not only performed these things in practice, but the inventive genius of our people has been aqually active. In the art of painting we can name a West; in scuplture, a Powers; in literature, Irving, Cooper, Bancroft, Prescott; in science, a Franklin; in mechanics, Fulton, Whitney, Morse. Our Franklin drew lightning from the clouds, and Morse taught it the art of penmanship.

The first vessel propelled by steam made her trial trip from the wharves of our city, and have we been loiterers by the way in steam navigation? Let our floating palaces on the Hudson, on the lakes, and on the Mississippi answer. Where in the world can their equal be found?

And if even in ocean navigation we for a short period appeared in the back ground, no sooner had the genius of our mechanics come in competition with the ocean steamers of England than they were beaten. Our Collins' line of four steamers have in two years made five trips across the Atlantic in less time than any of the Cunarders, though they have been running over ten years. The fastest steamers in the world were built in this city—thanks to the energy of our merchants—thanks to the energy of our mechanics, an American cannot but exult when he names the steamships Pacific and Baltic.

But it is not only in steamships that we rival and surpass all competitors. We have for years built the finest and fastest sailing vessels. Our Baltimore clippers are world-renowned; our fleet of new clipper-ships are on every sea. We had scarcely beaten the English by steam before the once haughty mistress of the seas was again to be humiliated and beaten by the Yankees. A few months since a small schooner built in this city made her appearance in the waters of England, and challenged the whole nation to a trial of speed. Trials took place, and our little skimmer of the sea was victorious over the whole yacht squadron of Britain, even in presence of England's Queen. And the commander of that little vessel, our fellow townsman, had the proud satisfaction, after the victory, of receiving Victoria on board his little craft, with Prince Albert, the projector of the World's Fair. He politely dipped his colors to the royal guest, and it is now acknowledged that the fastest sailing vessel in the world is the Yankee schooner America.

The veteran yachter, the Marquis of Anglesea is said to have remarked, on seeing the America, "if she is right, we are all wrong." And after the race it was asked, "Which is first?"—"The America." Which second?—"Nothing."

These triumphs alone would compensate for the raillery and ridicule which were heaped on the American department in the Crystal Palace, extorting as they did from the Tory paper, *The Times*, the admission that all the substantial triumphs of the year 1851 belonged to the Yankees. But the tone of ridicule once held towards us because of the want of show and the absence of articles of luxury in that department, has been moderated since our citizens have been awarded some of the highest prizes given at the Crystal Palace for articles of inventive genius.

C. H. McCormick, of Chicago, Illinois, received at the Crystal Palace the highest award for a reaping machine to harvest cereal grains, invented by him, which, when first exhibited, was viewed as an ingenious machine, but no mechanic or agriculturist there could be found who would believe that it would be practically useful—but seeing is believing; and after it had been fully tested, they were compelled to award to the Yankee the highest premium for the best and most ingenious agricultural implements. Yes, fellow-citizens, in Old England, where they pride themselves as having made the greatest advance in the science of agriculture, we have carried off the palm.

The repeating firearms invented by Samuel Colt, of Hartford, Connecticut, received honorable mention at the Crystal Palace. Colt's guns and pistols far exceeded anything presented by the ingenious mechanics of France and England—nations whose extence has been to make war a pastime, yet the ingenious son of peaceful America has gained the prize in the munitions of war.

B. F. Palmer, of Meredith, New-Hampshire, received a premium at the Crystal Palace for the best specimen of an artificial leg, having thirty-four competitors.

It may be asked what has the reaping machine of McCormick, the repeating firearms of Colt, and the artificial leg of Palmer, to do with the fairs of the American Institute.

I will tell you, the repeating firearms of Colt were exhibited at the American Institute fair held at Niblo's Garden in the year 1837, and then received a gold medel. The reaping machine was exhibited at the fair held at Castle Garden in 1849, and there received a gold medal; and the artificial leg was exhibited at the fair at Castle Garden in 1847, and received a gold medal.

Although these ingenious inventions were made by our mechanics so long since, and publicly exhibited and open to the competition of the world, they have not as yet been equalled by those of the old world.

How and why is it that America is so rapidly advancing not only in population but in the mechanic arts? It is owing to the institutions of our country, the breaking down of all restrictions, allowing every man to pursue such trade or occupation as he pleases, the political equality of all our citizens, the universality of common school education, the knowledge that each man has that it depends solely on his own exertions and talents as to what station he occupies in the community. Here there are no privileged classes in society. The man who labors for his living is not despised and degraded as in the old world. In this country the rule is changed, it is only the lazy drone who meets with the contempt of his fellow men.

This stimulates men to exertion, some in one branch and some in another. What is it that constitutes the real wealth of a country but the labor of its manufacturers, mechanics and operatives? Without this what would America have been? where would have been her canals, railroads and steamships? The idle rich man has his wealth, but what does he add to the wealth of the country? Nothing. Not as much as the industrious but humble operative. The tilling of the land and making it produce an hundred-fold, the manufacturing of the raw cotton. iron ore, and other substances, by bestowing labor on them, increasing their value and usefulness an hundred or thousand fold, it is that which enriches and benefits a community, and our thanks are due to our mechanics and laboring men for their aid in the progress made by America, and we hope that they will ever be active and industrious, making our fairs and exhibitions every year more and more varied, and worthy of the patronage of the public.

No where on the face of the earth is the divine command, "in the sweat of thy face shalt thou eat bread until thou return unto he ground," so fully kept as in these United States, and no where are the people so well supplied with the comforts and necessaries of life.

In other lands the nobility and aristocracy endeavor to alter the command and live by the sweat of the face of those they hold in bondage. They consider that the labor which they are commanded to perform by the Allwise Providence is a degradation.

But in those countries where labor is considered a degradation, the people are the least happy and the least civilized; and it is only in those countries where, and in proportion as the laborer is elevated in the social circle, that we witness the greatest advancement in civilization, and the greatest progress in the arts and sciences.

It is only in our country that the right of the laborer is fully acknowledged, and here has the greatest progress been made that has ever been made. In seventy six years the Republic has increased from three millions to twenty-three millions, extended her territories from the Atlantic to the Pacific, sprung in that time from infancy in the mechanic arts to a full competitor with all the world.

What has produced this great and glorious result? It is the full recognition and acknowledgment by the people of this republic of the DIGNITY OF HUMAN LABOR.

TWENTY-FOURTH ANNIVERSARY ADDRESS,

Before the American Institute, of the city of New-York, at the Tabernacle, on the 16th of October, 1851.

BY CHARLES T. JACKSON, M. D., F. G. S. F.

Mr. President and Gentlemen of the American Institute of New-York:

LADIES AND GENTLEMEN—From the urgent duties of an active professional life, surrounded by the calls of Manufacturers, Miners, Agriculturists, and Merchants, I come from the fumes, acids, alkalis, and salts of the laboratory, to address you this evening, near the close of your grand exhibition of the arts and manufactures of our country.

Deeply impressed with the inadequacy of my own learning or talents to do justice to the rich display of the products of American art which you have laid before an admiring public, I must ask your indulgence toward the few thoughts which I shall endeavor to bring for your consideration, concerning the ENCOURAGEMENT AND CULTIVATION OF THE SCIENCES IN THE UNITED STATES.

Any attempt to offer more than the most simple and elementary view of this important subject, will be out of my power in the short space of time we shall have to spend together in this hall

I have chosen this subject because I deem it one of vital interest to all concerned in the practical arts; for science has been defined to be the "Hand-maid of the Arts," and as such is most assuredly a "maid of honor," for certainly there is no higher vocation than that of ministering to the wants of the arts, on which the comforts and refinements of civilized life depend, and without which civilization itself could have no existence. Science may claim still more—it may be considered as the very *soul* of the arts, giving to them life and progressive power, creating new means of human advancement, multiplying arts, and re-acting again upon the mind of the discoverer or inventor, endowing him with still higher powers of discernment and application. The time has long since passed when the dignity of a science was reckoned by its uselessness and it inapplicability to the so-called vulgar uses of life.

No longer is learning to be banished from the workshop and shut up in cloistered cells or in colleges, there to be kept beyond the reach of the workingmen of our-land. No longer is science to be kept confined in her drowsy halls, or to be limited to the easy chair of a professor, and to be exhibited only to astonish a stupid and ignorant people; but on the contrary, she now walks abroad with her working dress on, and is found in the workshops of our artizans, in the field with the husbandman and in the depths of our mines, giving life to the arts and inspiring intelligence and conscious power among a sensible, practical, and by no means uncultivated class of our fellow citizens. The college is now outstripped by the common high school and academy in the walks of science, which are vainly denounced as not the ways of liberal education. One of our *Phi-Beta-Kappa* orators said, a few years since, "It is not expected of a scholar that he should hang with trembling anxiety over the vibrations of a balance." That gentleman, who at that time expressed the views entertained by one of our oldest seminaries of learning, has, doubtless, long since changed his views, and is willing to allow that accuracy is one of the highest qualities of a scholar.

It is too late for antiquated scholars to denounce the cultivation of science, or to expatiate on the superiority of a little knowledge of Latin and Greek, for the world now bears witness to the higher achievements of modern science; and instead of delving forever into the history and precedents of the past, Young America presses forward to her brilliant future, unmindful of the checks which conservatism in error would place in her way. A democracy of science must and will overcome all obstacles, and regard as milestones of the past many of our so-called institutions of learning. Reform is loudly called for, and the only answer we have had from many of those sleepy institutions is, that "We are going to reform," and then turn over and go to sleep again. In one of our colleges—I name it to its honor—the requisite steps have been taken to meet the wants of this progressive age. I refer to Brown University, and I trust that every encouragement that can be given will be afforded to enable that institution to carry forward its designs, that other institutions of learning may be encouraged to follow in its steps, to vie with it in extending the benefits of learning to all, and to "give to every one that asketh," what he may need, without forcing him to learn those things that will be of no benefit to him before he can obtain his parchment roll with two of the first letters of the alphabet after his name, to be followed by two others when he has forgotten his Greek.

I would not have you suppose that I despise classic learning. On the contrary no one loves it more than I do, however little I may have of it; but I do object to the idea that a liberal education depends wholly upon a mere smattering knowledge of two dead languages with a mere elementary knowledge of philosophy. Far be it from me to discouraging any kind of learning. I would that every man should have all possible means of acquiring the kinds of knowledge most conducive to his happiness and usefulness; but I do think that the public have neglected their own interests in not awaking from the dream they have been in for so long a period, and in not seeing that our supposed institutions of learning are far below the wants of the age, and are not in harmony with the other institutions and the customs of our country, being irresponsible, though somewhat limited monarchies in the midst of a Republic.

If we cannot effect the reforms we desire—and I own that seems difficult, if not impossible to do so in institutions not responsible to the people—let us establish independent institutions of learning, and have them adapted to the country and to the wants of the age. Let every great city have within its limits a liberal university, open to all who desire to learn; and let the abundance of science which each of our cities contains be brought into active operation ; and let the common high schools prepare their pupils for more extended instruction in the halls and lecture rooms of your new universities. Open your doors to all who desise to learn, and keep your teachers employed each and every day in full and practical teaching in the recitation rooms, and laboratories of science.

This must be done, and I venture to predict will soon be attempted; and if our citizens are true to their own interests, it will prove one of the most important steps that our country can take in the march of improvement. Let the unfounded prejudices against book learning be driven from the minds of men by making books still more worthy of being read and studied. Let theory and practice join hands "now and forever in indissoluble union." Are not the arts living illustrations of the principles of science? Is not the world a great book of wisdom, as yet but partially read? Is not the field of the farmer full of wonders but little known to him, for want of scientific light? "Give me to see," should be the cry of every intelligent man.

There may be men, who, through indolence, are unwilling to take the trouble of learning the scientific principles of the arts which they daily practice; but there are more who earnestly desire to know all they can learn, not merely for the sake of gaining more wealth but for the gratification of a laudable curiosity and for the improvement of their minds.

The iron master naturally wishes to know the nature and properties of every kind of iron ore, how it was formed, where it is found, and all the geological facts connected with its history, as well as how to reduce the metal to its most marketable form at the least cost and most profit. Though he can refine cast iron in the forge and puddling furnace, he is not content with a mere empirical routine, but desires to know the changes and the causes of the changes which take place in the conversion of the crude and brittle metal into tough and tenacious bars. He is also interested in knowing how arsenic, sulphur, phosphorus, and manganese affect the quality of the metal; and is not this knowledge valuable to the community if it prevents the loss of human life from the bursting of a steam boiler, the fracturing of an axle of the railroad car, or of the mariner's last resort upon a lee shore in a storm—the great sheet anchor and iron chain? Though he may not be a manufacturer of steel, is he not interested in knowing what it is and how it differs from soft iron? Is not every man who owns a penknife or a razor interested in knowing what those implements are made of, and on what their excellence depends? Is it enough for the iron master to know that somehow, or other, heat and fuel change iron ore into cast iron? Has he not an intelligent curiosity to know exactly what takes place in this conversion? Will it harm him to know how his fluxes and fuel operate, and in what the differences between hot and cold blast, anthracite, coke, and charcoal-made iron consist? Will not science aid him in attaining the desirable result of making iron as cheaply, and as well, on this side of the Atlantic as on the other? Can we not make as good cast steel from our excellent American irons as is made from similar metals from Sweden and Russia by the people of England?

Although we have learned to smelt lead advantageously, our working men do not know how to extract the silver which it often contains in considerable proportions, and the profit of its extraction goes into the hands of European refiners.

So with respect to alloys of copper and silver; we abandon the business of extracting the precious metals to Europeans, and have not a single cupelling furnace in the United States.

Only a few years since, we were wholly dependent on England for copper; but now we produce about one-tenth of the quantity required in the United States, by working a few of our own mines, and by smelting ores brought from other parts of the world. There is room for the extension of this business and, in time, we shall become independent of foreign mines and furnaces.

Gold we have in abundance on both shores of our continent; but unfortunately, this delusive metal has led too many to ruin on account of their ignorance of the history of gold mining, and a want of scientific skill in operating. A knowledge of the fact that veins of the precious metals decrease in richness as they descend into the earth, would have saved thousands from plunging into erroneous speculations.

Baron Humboldt confidently predicted that the gold mines of California would prove of little economical value to the United States; and notwithstanding the $50,000,000 worth of gold that our new territory pours into the lap of commerce every year, if I am not erroneously informed, more than double that amount is expended in obtaining it! By scientific skill, profitable returns can be obtained in this branch of industry, both in California and the southern States, and also in Canada; but there is but little knowledge of the art of mining among the operators.

Metalic zinc has never yet been profitably distilled from the ores of this country, owing to want of skill in the operatives; but we shall soon learn how to prosecute this art, and shall then bring our numerous rich zinc mines into action.

Already citizens of New-York and New-Jersey have made a beginning, and have succeeded in the manufacture of an innocuous white paint from the ores of the Sussex Mines, and will, ere long, render Le Clair's discovery economically valuable in the United States, and we trust that this discovery will banish lead paralysis from the hands of the painter, and cholic from his bowels.

Metalic tin is not produced in this country for want of the discovery of mines of its ores, only five small veins having thus far been discovered in the United States.

Turn the attention of mineralogists and geologists to our metamorphic rocks, and let them search with practical views, and we shall doubtless soon know if we are to be wholly dependent upon England and the East Indies for this valuable metal.

Iron ores we have in abundance, and to America is due the honor of discovering the method of reducing them by means of anthracite or hard coal.

The finer kinds of iron which are smelted by means of charcoal fuel from the best kinds of iron ore should not be confounded in our markets with the coarser varieties, but should be reserved, as in Europe, for particular purposes.

We have much to learn in the science and economy of the furnace before we can produce iron at sufficiently low cost to dispense with tariff laws. If half the time and money that is expended in political electioneering, had been devoted to the improvement of the art of the iron smelter, we should long since have produced this indispensable metal at a lower cost than it can be obtained for from Europe.

Of the art of mining, our people know but little; and notwithstanding the multitude of absurd speculations in the formation of stock companies for working mines, we have but very few successful operations in progress.

Few are aware that a mine must first be constructed before it can be advantageously wrought, and that a considerable amount of money must be expended in making the requisite preparations, before profitable returns can be expected from even the richest mines. Hence, through want of knowledge, and unreasonable impatience, a good mine, instead of being won, is lost, with all the capital expended in attempts to open it.

Thus far our successful mining has been the work of Cornish operators; and I regret to say that there are but few that have given profitable returns, owing to the want of scientific skill and economical management.

Let us now turn our attention to the most important of all arts —to Agriculture. In this we ought to take the highest rank; but unfortunately the art requiring the best efforts of science for its improvement has too generally spurned the aid of those who were most desirous and most able to advance its interests. But the farmer is now awakening, and begins to see and believe that the skill of an agricultural chemist is of some value in the management of the soil. He finds that by his old method his soil that once yielded him more than forty bushels of wheat to the acre, no longer produces more than *twelve*.

He asks the chemist to analyze his soil, and finds that certain substances which formerly constituted important elements of it are gone, and on analysis of the grain he sells, those substances are found. It becomes clear then to his mind, that he has sold the elements of fertility with his grain. His land is exhausted. What shall he do? Must he abandon his homestead with all the endearing associations that cling around it, and plunge into the western prairies to find a virgin soil to exhaust in a similar manner, and thus proceed like the caterpillar consuming and destroying, as he moves westward? No! The chemist informs him how to replenish his exhausted soils, with the elements of fertility, at a low cost, and thus enables him to cultivate more profitably than ever his old farm. The old and exhausted plains of Eastern Virginia, are now undergoing this process of renovation, and lands bought a few years since for six dolars per acre, are now worth fifty. Did our time permit, I could recount hundreds of similar improvements, brought about by men who are little known among the farmers, but whose labors slowly and silently creep into the fields through the pages of printed books and agricultural journals.

Indian corn, the golden harvest of America, so rich and prolific, is one of our most valuable crops, and being a hoed grain crop, is peculiar to American agriculture, and changes altogether the rules of rotation taught in English books on the art. The cultivation of this valuable grain is a matter of the highest importance to our agricultural friends, and they should learn how to raise from 75 to 130 bushels, where they now produce only from 12 to 20. I need only say that high manuring with well-made composts, is all that is needed to insure this desirable result.*

I must not forget to call your attention to the study of the science of Botany, which, in its higher branches, teaches the structure and functions of all the organs of plants and the mode of their development; while the examination of the habitat and peculiar conditions for most favorable growth of different genera and species suggests to the ingenious husbandman various methods of obtaining the most desirable results in cultivation.

---

* Mr. John Brown, of Long Island, in Lake Winnipiseoge, has an average yield of 80 bushels of shelled corn to the acre, and in one instance, by high manuring and a peculiar mode of cultivation, he raised 136 bushels, for which he received a premium. Similar crops have been raised on the same and the adjacent islands by Messrs. Lamprey, Pillsbury, Boody and others.—*See my Final Report on the Geology and Mineralogy of New Hampshire.*

Entomology teaches the nature and habits of insects, and although their name is legion, and we may not be able to control their depredations so much as we could desire; still we can do much by knowing their habits, and their metamorphoses in reproduction.

I need not say that a knowledge of comparative anatomy and veterinary surgery is highly useful to the farmer; for it is too obvious to require argument. Many valuable animals would be saved, if the farmer reflected that they, like men, have bodies subject to disorders which rest and timely aid would cure. Certainly, we owe much gratitude to the animals which furnish us with food and clothing, and add so largely to our comfort and happiness in various ways; and though we may be willing to submit ourselves to the practice of quacks, let us spare our servants of the brute creation.

In addressing men familiar with mechanics, I need not dwell upon the importance of the cultivation of the science of Mechanical Philosophy and of Mechanics; for the history of all the arts shows how deeply they are indebted to these societies. It is said by one of our most eminent agriculturists, that all the improvements in the plough were made by mechanics and mathematicians. Our power looms, spinning jinneys, self-acting mules, cotton gins, carpet looms, printing presses, and thousands of other ingenious machines, resulted from the application of the science of mechanical philosophy. Steam engines, the combined result of chemistry and mechanics, demonstrate the power of those two sciences, when joined hand in hand.

The sailing ship, which for ages has been an object of just admiration, as she ploughs the deep, and works up against the opposing wind, is a splendid result of science reduced to practice; but now she stands still to admire that marvel of the waters, the steam ship, as she marches through opposing currents and head winds, straight for her port, cutting hurricanes asunder and leaving them behind,

> "Asking no aid of sail or oar,
> Fearing no spite of wind or tide."

Who that regards the railroads which now cover our country with their reticulated web, recognizes their origin in the tram road of the miner, emerging from the dark levels of a coal mine? Now that they have become, through the skill of the engineer, the paths for those iron steam horses, which were the laughing-stock of the whips of London a few years ago, as they attempted to run over the pavements, and split their sides with jolting over the stones, and came to a dead halt amid the jeers of the triumphant coachmen. On these iron rails, the locomotive engines were at home and whizzed away whistling as they went, while the ominous warning—"Look out for the engine when the bell rings"—tells us of the speed and power of this new means of locomotion.

Chemistry and physics gave to the world the electric and electro-magnetic telegraphs—those marvelous means of communication which enable us to use the lightning for our Mercury, in transmitting intelligence quick as thought!

This product of science was the work of many heads and hands, and belongs to no one man, but to the scientific world. To Oersted, of Copenhagen, in Denmark, who first suggested it, to Joseph Henry, who improved the electro-magnet, and still more to Daniel and Grove, of London, who invented the sustaining Galvanic battery, the chief credit is due; while to several others is to be credited the different modes of recording the signs by which numbers and letters are denoted.*

Astronomy has given us the means of determining the position of any spot upon the surface of the globe, and has placed in the hands of the navigator, the simplest methods of tracing his devious way across the deep, to places he has never seen. The mechanic has furnished him the sextant and chronometer, by which he measures his latitude and longitude, with wonderful precision. Eclipses of the sun, formerly the terror of superstitious and ignorant people, are now regarded as the mere crossing of the hands of the great siderial clock of the heavens, and as the indicators of the longitudes of places upon the earth's surface. At the suggestion of Arago, the talking wires of the electric telegraph are made to measure the longitudes of places inland, with greater accurary than any astronomical measurements by lunar distances and occultations of stars, as formerly practised with the aid of the sextant and chronometer only.

---

* See depositions of Dr. W. F. Channing, Professor Joseph Henry, B. A. Gould, Dr. C. T. Jackson, and others, in the trial of F. O. J. Smith and others, vs. Downing and others; also, French and others, vs. Bain and others, Boston and Philadelphia.

The recording electro-magnetic clocks of Bain, Wheatstone, Locke, and others, give precision to astronomical observations never known before, and divide the second of time into a hundred parts, measurable by the dividers upon a strip of paper!

It is by no means certain that there are not more worlds for science to conquer; and it is more desirable to march onward, than to stop to quarrel about the priority of discovery of those which have already been made. Time and the scientific historian will do justice to all who have contributed in bringing about these valuable results, regardless of every unjust monopoly attempted by patent laws. An occasional retrospect of the scientific men of our land is much needed, to prevent abuses, which have become too prominent in this and other countries; for the rights of discoverers should be held sacred.

It is not to be expected that men of science will devote their lives to increasing the sum of human knowledge, if their labors are not appreciated and honored. If ingratitude and base envy meet them at every step, and sordid avarice appropriate their discoveries and give them in return nothing but insult and injury, can they fail to be disgusted? A sense of duty, and fondly-cherished hopes that their memories will be honored when they are no longer living, may still stimulate them to proceed with their labors; but why should their happiness be destroyed by base and wicked men, full of low cunning and artful imposture? It requires no small amount of moral courage in a man of science to lay his discoveries before the world, and abide the storm of abuse that is sure to fall upon his head.

> "He who ascends to mountain tops shall find
> The loftiest peaks most wrapt with clouds and snow;
> He who surpasses or subdues mankind,
> Must look down on the hate of those below,
> Though high *above* the sun of glory glow,
> And far *beneath* the earth and ocean spread,
> *Round* are icy rocks, and loudly blow
> Contending tempests on his naked head,
> And thus reward the toils which to those summits led."

The history of scientific men most painfully impresses us with the truth of these lines. Gallileo, Harvey, Jenner, and Scheele, all suffered persecutions severe, in direct ratio to the importance of their discoveries; and the day is not yet come when persecution for doing good shall cease.

It is true of the great men I have just named, that the world ultimately did justice to their discoveries, though not during their lifetime. We now know that Watt discovered the composition of water; but it was not until 66 years after his death that the honor of this discovery was awarded to him by the instrumentality of the researches of Arago and Dumas, who were sent to England to learn all the particulars of his scientific career, for the purpose of preparing his eulogy for the Academy of Sciences of France.

Every attempt was made to rob our own Franklin of the honor of the discovery of the identity of lightning and electricity, and of that of discovering the means of protecting our ships and dwellings from the thunderbolt; but, in time, the award was made to him by the unanimous consent of the scientific world, and the words "*Eripuit fulmina cœlo, sceptrumque tyrannis,*" record his services to science and his country!

I need not say more of injustice done to scientific men. The subject is a painful, and the facts are discreditable to our race. It is better that we should set about the work of preventing the repetition of them in our own land, and of rescuing mankind from the crimes brought on by selfish ambition, unprincipled avarice, and hateful envy.

How can this be accomplished?

First and chiefly, without doubt, in cultivating a high morality in the community and a sense of justice toward our fellow men.

Secondly, by requiring full and decisive proofs of a discovery before any man's claims to it shall be allowed.

Third, by having recorded, in the archives of science and in permanent institutions, the exact history of every important discovery, with the evidence of the facts alleged.

It should not be enough that a mere speculator in inventions, should go to a patent office and swear that he has made a discovery and invention, when he may have stolen it from some unsuspecting man of science, or from a more humble artizan.

No true man of science will ever disgrace himself by asking for a patent, even though he might not know what to do with his discovery more than the tailor did who drew an elephant at a raffle. He cannot and will not leave his scientific pursuits to turn showman, mechanic, or merchant; and it is better for him and for the world that he should continue his favorite pursuits and bring out more from the unexplored depths of human ingenuity and skill. The poor artizan cannot afford to enter into long tedious and expensive lawsuits to obtain his rights, and therefore has to lose them for a time at least.

The patent office affords, (as too many whom I now address well know,) but very inadequate protection to the discoverer and inventor. A patent entitles one to spend the rest of his life in law-suits, and that's all!

What then shall be done? How can we protect the true discoverer and inventor? This is the subject I will now consider; and I think the means I shall point out will prove most satisfactory to all who have honest and just claims. I cannot say that it will be a perfect method, but it will undoubtedly be better an any we have tried.

There was a discovery of a most curious and wonderful nature made in France a few years ago—one that astonished the world more, perhaps, than any that was ever made; one, too, of universal importance, and very difficult to protect by letters patent. This was the discovery of Photography, or of causing objects in nature to paint their own pictures by the light of the sun. This discovery was made by a Frenchman, named Niepce, who on his death entrusted it to his son. It was then quite imperfect, though the principle was well established. Niepce communicated this discovery to Daguerre, a Parisian painter of dioramas, and it was arranged that they should perfect it by their joint labors; and since Daguerre promised to render it available to their interests, Niepce agreed that the art should bear Daguerre's name.

By the aid of chemistry this wonderful art was brought to such a degree of perfection as to be ready for publication. To Daguerre came the happy thought of entrusting this discovery to one of the most honorable members of the Institute, M. Arago, the astronomer of France, and this savant at once offered to lay the discovery before the Academy of Sciences, and to make it free to the public on certain terms. This was soon arranged, and the fact of making a picture by sunlight was instantly demonstrated to the academy. An award was then voted of 6,000 francs pension per annum to Mr. Niepce during his life, and 4,000 francs per annum to Daguerre for this discovery and invention, and forever after it was to be free to all men and all nations!

Thus the world became forever indebted to France for the most beautiful art that has surprised this wonder-loving age. Who, that has taken out letters patent for trifling improvements in this art, does not feel ashamed of himself when he contemplates this noble gift of the French nation? Gentlemen, I doubt not many of you have caught the idea which I have the honor to suggest for your consideration. If we would encourage the honest discoverer and inventor, we should have some institution as noble as the Academy of Sciences of France; and without abolishing the Patent Office, we would leave to inventors and discoverers the choice between the two, and I doubt not most American inventors would prefer the academy.

Let us have, then, a *National Academy of Sciences* to act as an umpire, and as the advisers of Congress in all matters of scientific discovery and invention. Let this academy thoroughly examine into the merits of all discoveries and inventions laid before them, ascertain the rights of the discoverer or inventor, and the value of the invention, and then recommend to Congress a suitable award, on condition that it shall be made free to the world. This award would, doubtless, be most valuable in the form of an annual pension.

Once passed upon by the academy, there would be no lawsuits for infringements, no controversies to fatigue the public and annoy the families of parties in dispute; for the award would be final, and the discovery should be made free.

I need not enter at this time on the manner of forming this national academy, nor advise as to the frequency of its sessions and precise mode of operation. The members might be nominated by the President of the United States, and be confirmed by the Senate. Due care, of course, would be exercised in the election of men to offices of such high responsibility and trust. Certainly, there could be no more difficulty in selecting suitable men than there is in choosing the Judges of our Supreme Courts, who have thus far proved unimpeachable and most noble men.

I may, perhaps, be allowed to say a word as to the method of laying a discovery before the proposed institution; and in this I would follow that pursued in the Academy of Sciences of France, of enclosing specifications in a sealed package. The sealed package should be duly and cautiously endorsed with the nature of the discovery, &c.; but should keep secret the precise means, which are to be detailed in the enclosed papers. The academy, by its publication, is to notify the world of the reception of such a package, and call upon all claimants to file their claims and their *evidence*, and fix upon the time for breaking the seals. It is obvious this system would prevent subsequent reclamations, and insure priority of discovery. On due and careful investigation of the evidence, a committee charged with the duty could report to the academy, and then that body might vote the proper recommendation of award, and see it laid before Congress at a proper time. In many cases, men of science would only require recognition of their rights of discovery, and then give the results of their labors to the world. In other cases, where the inventor required payment, it should be honorably made.

This system once introduced, we should see the end of those impositions that are too frequently practised upon government and the people; and science and art would walk in open day, honored by all men, and America would march rapidly in the way of scientific improvement.

It will be understood that my object in proposing the establishment of a National Academy of Sciences, entrusted with the executive powers of a legal tribunal is to promote the cultivation of the useful sciences and arts, and to afford just protection to the rights of discoverers and inventors. The transactions of this body would give to the public the most valuable knowledge of new discoveries, and in a reliable form, and thus save the world from the artful tricks of impostors, and our courts of justice from the labor of investigations which should not be required of gentlemen devoted to the practice of the law, who are not always the most competent persons to pass upon questions of science and of scientific discovery.

You have, I doubt not, understood that this method would augment our means of scientific education; and I trust that ere long the practical arts will receive a new impulse, in their march of improvement, from accumulated power derived from scientific methods of study.

Science is systematized knowledge; and, as you well know, is power of the most valuable kind applicable under new conditions, and in cases often of great importance to the arts, to manufactures and agriculture; while, at the same time, this high power of the human mind is capable of saving the country from the horrors of war, by warning all nations that there is not a means wanting for our most effective defence against the aggressions of an enemy. Napoleon knew that science was full of resources applicable to war; and had he possessed a fleet of steamships in advance of England, you, I doubt not, can imagine the direful results that would have happened to that country.

Gentlemen, in closing this very imperfect address, allow me to say that it was out of my power to do more than to offer suggestions which your more mature wisdom may render useful. Any one of the arts, represented by machines and products of industry, would have required more than an hour for its exemplification and eulogy. Therefore, as I walked through your halls and wandered amongst your rare show of beautiful and useful products of artistic skill, and contemplated the valuable animals collected in your stalls, could not but fold my arms in despair at any attempt to do justice to your magnificent exhibition. But I cannot fail to express my admiration on viewing those wonderful instruments* which cut as easily as the scissors would a piece of paper, and without more noise, the thick plates of steamboiler iron, and with a precision as accurate as the finest drawn line on their surface; nor can I omit to mention the "improved ring-spinner," that forms so delicate, even, and true a thread, and gathers upon the spool its charge of fine yarn for the power loom, while the broken threads, which, in ordinary machines for this purpose, incumber the spinning gear and clog the rolls, is by this almost thinking and prudent machine, quickly wound up, torn off, and packed away so as to give no trouble either to the machine or to the fingers of the attentive girl who waits upon and tends this benefactor of her sex.

I must not forget to mention the new hydrostatic machine of Mr. Huse, which, by a head of cold water, supercedes steam in moving machinery, printing presses, &c., wherever a Croton river or a Cochituate lake lends its surplus waters from its aqueduct—a machine saving all fuel, firemen's and engineer's wages, and dangers from explosions and from fire.

Nor should I omit to notice that curious and most ingenious method of priming a gun by Dr. Maynard; a method which enables the sportsman to fire as rapidly as he can load his gun, and for forty or more shots, without the affixing of a single cap to the cone of his fowling piece or rifle, and without exposure of his priming to moisture or accident. So far as war can be rendered less frequent by augmenting its terrors, and in making weapons more destructive, this new method of gun priming will have an influence not to be misunderstood or undervalued.

---

* Dick's press and shears, an instrument that received one of the great medals at the World's Fair, in London.

Shall I attempt to pourtray the beauty of your New-York tapestry carpets, and those most perfect imitations of Gobeline tapestry pictures, which adorn the walls of Castle Garden, or to describe those beautiful fabrics and fine work placed by fair hands in your halls, or expatiate upon the delicacy, fineness, and silks which lay in such profusion on your tables, or call your attention to the newly introduced manufacture of linen thread, which I at first mistook for silk, so even in its fibre and so glossy on its surface, or express my conviction of the superiority of linen thread over cotton, or even silk, in making firm and substantial work, aud in affixing the buttons on our shirts and coats, I should but repeat thoughts that passed through many a mind as the objects in your exhibition met our view.

I cannot, however, pass by the model of the American yacht that stands proudly over the splendid Victoria silver vase won by an American sailing craft upon English waters, in her contest with all the clippers that the former, though not now only mistress of the seas, was able to bring to the race, without feeling proud of the achievements of my countrymen and of their efforts at the World's Fair, and at the same time a respect for the magnanimity of Mother England, in her noble acknowledgment of her defeat in an art for which she has so long been justly renowned.

What shall I say more ?—Dazzled and bewildered in your labyrinthine alleys of tables, crowded on all sides by the beautiful and useful products of American art, now meeting a tower of beautiful gilded porcelain and stone ware, next bending over glazed cases full of costly jewerly and richly chased silver and gold, then stooping curiously to admire the delicate needle work which pourtrays a garden of flowers upon delicate lace or muslin, or on the bosom of some bridal shirt, or richly adorned kerchief for some fair maiden's neck, I turned suddenly and find myself amid a load of Flora's, Cere's and Pomona's stores most enticing and provokingly made of tinted composition, and placed in competition, as it were, with the originals, to puzzle the curious in distinguishing them.

Again, I find myself surrounded with the more cumbersome implements of husbandry, but all in gala dress, and come with bright faces to the fair. The plough here shines with unwonted lustre, and the scythe equals the razor or the surgeon's knife in edge and polish. A stack of long square bars of American cast steel, equal to the best of English make, looms up before me to indicate that the prediction hazarded in a former part of this address is *already accomplished.*

I pass by a series of glass jars and casks filled with white oxide of zinc, and shining pannels, easily mistaken for white Chinaware, exemplity its value as a pure and spotless unchangable white innocuous paint. This, too, is a new American production from the New-Jersey zinc mines, and a true bringing home to our country of Le Clairs's most valuable discovery.

I turn again into a room filled with whizzing, hissing, clanking machinery, driven by the power of fire and water, where this accommodating steam spirit, invisible to the eye, lends his giant strength and hundred hands to every kind of machine that the ingenuity of man has devised for manufacturing useful products. Here planing iron, there spinning cotton, braiding silk and knitting bobbin in a dance of spools, while, at the same time, he prints his "bill of the play," chews iron in sport, turns a hundred lathes with his foot, and saws and turns wood for exercise, and goes into all kinds of arts and manufactures without danger of failure, and with no disposition to "strike," so long as his attendants allow him wood or coal, and water, for food, and drink.

Who can look on these things and fail to admire the science, skill, and ingenuity of man, and to adore THAT BEING who made him and the mind that has accomplished such wonders?

Go on, gentlemen; encourage art, science, and skill, and let the world see that America is not behind any of the nations of earth in enterprise and active intelligence.

ADDRESS

Delivered at the closing of the Twenty-Fourth Annual Fair of the American Institute, at Castle Garden, October, 1851.

[BY THE HON. H. MEIGS.]

Ladies and Gentlemen:

In the unexpected absence of our venerable President, General Tallmadge, who has been expected here for the last hour, I appear, by request of the managers, to endeavor in some measure to fill the vacancy.

We all feel amazed at the rapidity of improvement in these latter days; many new, and almost every invention improved. You will here find, on close examination, a great amount of the latter before you. Within the last two years you have seen here the McCormick Virginia Reaper take one gold medal; Dick's Press also; either of them worth a royal revenue, and both taking the Council medals from all the world. You see also Borden's Meat Biscuit take another. You saw here, long ago, St. John's Compass and his Excelsior Soap, which have taken the Jury medals of England. In such a climate as England, the "Reaper" would be cheap at a million dollars a year. You behold here Dodge's Cop Spinner, unrivalled for its wonderful performance.

Let us proceed in the order indicated by our charter. To promote, first, agriculture; second, commerce; third, manufactures; fourth, the arts. Looking back some thirty years, I had the pleasure of urging the necessity of giving to all the implements of agriculture the best form, temper, and perfect polish, and I enjoyed the getting up by my learned friend, Dr. Samuel L. Mitchill, a plough of the best workmanship and figure of that day, and polished as bright as a razor, which was sent as a present to the

Emperor of Russia, who was so wise as to appreciate its worth, and presented to Dr. Mitchill his grateful thanks and a diamond ring worth some thousands of dollars.

Now, look at the polished instruments before you. Look at the delicious fruits and flowers in the gallery. Look at the faithful copies of them by Glover, of Fishkill, fixed as lasting models fac similes of the originals. Examine further the insects injurious to the fruits, and become acquainted for the first time with these little destroyers, so as to be able to exterminate them and not another class of insects which destroy these enemies but never touch fruit.

Think of the large supplies of delicious grapes now spread before us—thanks to the persevering labor and science of Dr. Underhill, of Croton Point, and others—no longer a dessert for the rich man's table, but good for a few cents in the hands of the poor boys and girls.

Who ever heard of a peach crop until of late years. Let us be grateful for the peach millennium which has lately arrived, for never, since the time of Adam, is it known that any people ever had such a universal supply of that delicious fruit. Ultimately this great republic, having all climates and soils and surfaces, will be a wonder indeed; so great in extent that all seasons are experienced at once—from heat to cold, storm to calm, rain to drought. Some portions always able to supply the needed productions, not only in quantity, but by science and care vast improvements in quality of every thing. So much for a mere hint at agriculture.

Our next theme is commerce, foreign and domestic. What a scene of thousands of river, and lake, land, and ocean steamers. Hundreds of thousands of tons of coal borne swiftly from their mountain beds to our fire-sides. Passengers, gold, and goods transported across oceans at a speed that continually astonishes us. Measure the speed by a coach and horses; only imagine the steamer *Pacific* passing through seas as lofty as your two story houses at a pace of twelve miles an hour, and let the horses try that speed on Broadway, and every body will see that they have run away. Admire the new and strange lines of that model yacht before you! and Victoria's silver vase, its prize! The *America* beat all the yachts—some eight hundred af them, and, over and above them, 25,000 sailing vessels. All, all! that England has afloat.

As to our third article, manufactures, this castle teems with thousands of evidences of American advancement. How you admire them! How much do I, and those of my generation—the men of seventy years of age—when we compare the very few and imperfect manufactures of our early days. What a total revolution in the manufacture of cloths, of cotton, wool, and other materials. To enumerate would require volumes. What works in iron; our locomotives by thousands running here and in Russia, and what mountains of iron ore, and what mines of coal. Why, within a short time past scientific men have found in Iowa, and thereabouts, *twenty* thousand square miles of coal additionally to our former stock. After covering our planet with Rail-roads, we could furnish all our sister planets with a net-work of rails. Although our mills and hammers are at present checked, yet a brief future will renew their movement and redouble their work, and the fires of the furnace will be re-lighted never again to stop. A straw cutter was a desideratum to the farmers; a root-cutter, and, at last, look at that one cutting hickory hoop-poles an inch and-a-half thick into inch pieces as easily as the corn stalks, to all appearances. We used in old times to admire the polished steel ornament of ladies, and the little mathematical instruments in their shagreen cases. Now look into that case of polished tools. What gems of art from the broad axe, which hews the hard live oak for ships, to the cooper's adze. They are fit charms to be suspended from the watch-chain of the goddess of American liberty, and she will add those radiant steel saws of our fellow citizen, Hoe. May she wear such charms a thousand years. Bramah, of England, like some oriental deity, held the implicit faith of England till Hobbs dispelled the charm; Hobbs of Massachusetts. London comes here for her tailor's shears. The best cut cloths of Londoners are cut by New-York shears. In elegant manufactures for ladies' apparel, from crown to foot, how rich, fine, and tasteful! they are worthy of the lovely persons of our lovely ladies.

In painting and sculpture our headway is great. A Greek slave, by a Yankee sculptor, stood before the world an object of admiration. Unions are doing nobly in the arts of design, fast going from good to best. Our recent fashion of unions and clubs in our country excites the attention of intelligent Europeans. A French scientific journal says: "They have among them for instruction what they call *meetings* at which some *unknown somebody* is expected to rise and say *something entirely new to the savans!*"

This *meeting*, called the American Institute, by the zeal and knowledge of its members, by integrity, by never having such a thing (as our worthy President says,) as an absent dollar, has done good in its working. Many of you will live, I trust, to crown its great edifice with the Branch of Palm. It never has envied others; it has always urged like *meetings* every where. It has always appealed to the South to do likewise, and it will rejoice to be beaten in every good thing by meetings in every State in the Union, except one, and that is in good intentions.

Ladies and Gentlemen,—We now bid you good night, and may God bless you all, and keep you till the next Fair.

PROCEEDINGS OF THE FARMERS' CLUB.

American Institute,
Farmers' Club, May 6th, 1851.

Judge Van Wyck in the Chair. **Henry Meigs**, Secretary.

The Secretary read the following papers, translated and prepared for the Club by him.

[From the Revue Horticole, Paris, January, 1851.]

ON THE CULTURE OF MELONS BY SLIPS.

At this time when the cultivation of melons has become very extensive, I think it a duty to give the details of my successful practice with slips, and the comparison of them with those from the seed. On the 25th of April last, I took the slips from a Prescott melon of the last season—it is a pure white fruit. I put the slips under glass as often as necessary to protect them from bad weather. They soon took root, and in ninety days gave ripe fruit, equal in every respect to those raised under frames from seed. The advantages of the slip is its early fruit, plenty, and very few leaves. Melon seed, planted under the same conditions on the 8th of May, grew very vigorously; but the fruit was much later—so that on the 8th of June the melons on the slips were as large as hen's eggs, while the seed plants hardly had one fruit set. I have set out the slips at various seasons, and have always had excellent results.

LAMARTINE, *Gardener of Louviers.*

PRESERVATION OF FRUITS.

This is important to fruit gardeners, for the best fruits can be kept in perfect condition for the whole year. Much may be done by having the fruits ripen in succession, and when they are nearly ripe, to be gathered, (the cherry when perfectly ripe, the other fruits three or four days before maturity.) The seed fruits of Autumn should be gathered from eight to twelve days before perfect ripeness, for they contain the necessary elements to perfect their ripening, which is nothing more than an independent chemical action. By separating the fruit from the branch, and stopping its supply of sap from it, it elaborates more perfectly the juices contained in its tissues, the sugar principle is no longer subject to added water of the sap, and now becomes of richer taste. The suitable time to gather these fruits is when from green they commence on the sunny side to turn yellow.

Gooseberries and raspberries must be picked when perfectly ripe. Seed fruits which ripen late, in September or October, should be gathered when fully ripe, for after that they lose quality and are more difficult to preserve. The fruit on the *lower half* of the tree should be gathered first, for that on the *upper half* in eight or ten days after will be ripe. Fruit on old trees should be gathered sooner than that on young and vigorous trees, which are later than old ones in dropping their leaves. The time to pick is easily known by the fruit coming off easily. Grapes for preservation should not be picked until perfectly ripe. Fruit for keeping ought to be picked in a dry, clear day, between noon and 4 o'clock, P. M. The best known method of gathering fruit is *the hand.* There should be no pressure on it for the least bruise leads to rot. They should be laid on cloth in the basket, and only three deep, for more than that is apt to hurt the lower tier; each layer must be separated by leaves—wrap every peach with a grape-vine leaf. The basket must be carried carefully without any jarring or shaking. The fruit must be spread on tables, covered with leaves or moss, very dry, in dry, airy rooms. The *peaches must be cleansed of their down.*

The Preservation.—The room to contain the fruit must be contained in an outer wall—space between walls about twenty inches. The walls should be a foot thick, of pise or clay, which is better for this purpose than any masonry whatever. Straw or marl may be mixed with the clay. Such walls cost but little, and are very bad conductors of heat. Double doors and windows are of course necessary to pass two walls. The roof, supported by prop pillars, must be covered with moss contained between thin rafters, well covered above and below by thick coats of plaster, to shed rain and prevent the transmission of heat. This cover must be at least a foot thick.

[Revue Horticole, Paris, June, 1850.]

GREMECHELA, 23*d May*, 1850.

DATE PALMS OF AFRICA.

Extract of a letter from M. Paul Merat, an officer of the French army, to his father, Dr. Merat:—

"We are here on the confines of the great desert, in the Aures Mountains, on the south of the Province of Constantine, where few Europeans have penetrated. The climate here is extremely variable. In day time, we have a temperature of 30 to 50 degrees centigrade, equal to 70 or 80 degrees of Fahrenheit; and yet the nights are so cold as to require fire. On the 29th of April last we had snow, and the highest elevations have it during summer.

The land appears to be very fertile, as it bears a luxuriant vegetation; but there is very little cultivation here, and I hardly see anything but barley and a little luzerne.

Not far from here, in the desert, there is an oasis of date trees, which furnishes part of the subsistence of the neighboring tribes. There are two sorts of date palms, you know,—the male, which gives no fruit, but which fertilizes the female palms, which yield the dates. This distinction was known to Pliny. Of about 1000 or 1200 palm trees which compose this oasis, there are but twelve or fifteen males. At Sidi Akla, further off in the desert, in another oasis, there are but two males. The organs of fructification of this vegetable are contained, for each sex, in an immense pod or spathe, which, at maturity, bursts with a report like a pistol. That of the male opens fifteen days before the female.

As soon as the female flowers are open, the Arabs cut off the male flowers and shake them over the females, or attach the male flowers to the bunches of female flowers. If the wind does not convey the pollen to the female, they cover the male with the bournous or cloak, or mats, so as to save pollen for the barren females. It is interesting to see the care taken of these operations—to see them remove the bournous or mats as soon as the wind is fair for the pollen to reach the barren females.

The dates are gathered in November, and the best of them, when preserved, will keep 12 or 15 years. The inferior dates are fed to horses, mixed with barley or with *safsa* (luzerne, I suppose.) The Arabs pretend that neither beast nor man should eat dates alone. They mix camel's milk or cheese with dates. When a date tree is barren, they make incisions, and extract the sap, of which they make a sort of wine, which intoxicates when taken to excess. It is, in moderation, an agreeable beverage. One tree will give at least a pail full per day, for many months together. When it stops they shut up the holes with sand, secured over with camel's skin. The Arabs say this renders the tree fertile. The natives say that seedling date trees are generally barren, and of a less fine growth than those from offsets. When the tree is as high as a man, it throws out shoots; these are taken off and planted in the soil—*I should say sand*—constantly watered by little rivulets of water. At six or seven years old they begin to give their fruit. This date tree serves to the men of the desert as the cocoa-nut tree does to the men of islands."

Extract from a lecture by Mr. Brockedon, at the Royal Institution, London, March 24, 1851:

"Caoutchouc is a vegetable constituent, the produce of several trees. The most prolific in this substance are siphonia caoutchouc, urceola elastica, ficus elastica, &c. Of these the siphonia caoutchouc extends over a vast district in Central America, and the caoutchouc obtained from this tree is best adapted for its manufactures. Over more than ten thousand square miles in Assam the ficus elastica is abundant. The urceola elastica (which produces the gintawan of the Malays) abounds in the islands of the Indian Archipelago. It is described as a creeper of growth so rapid that in five years it extends two hundred feet, and is from twenty to thirty inches in girth. This tree can, without being injured, yield, by tapping, from fifty to sixty pounds weight of caoutchouc in one season.

" A curious contrast is exhibited in the tardy growth of the tree from which gutta percha is obtained: This tree does not come to its prime in less than from eighty to one hundred and twenty years. The produce cannot be obtained but by the sacrifice of the tree. It is found in a concrete state between the bark and the wood, after the tree is cut down, and it is in this condition that, having been scraped out, it is sent to our market. When coagulated by evaporation or agitation, caoutchouc separates from the ligneous portion of the sap of the trees which yield it. The solid and fluid cannot afterwards be reunited, any more than butter is capable of mixing with the milk from which it is separated. Caoutchouc is a hydro-carbon. This chemical character belongs to all varieties of the substance, and many other vegetable constituents, though they differ materially in physical qualities. Some specimens are harder than gutta percha itself, while others never solidify, but remain in the condition of bird lime or treacle.

" A cube of two-and-a-quarter inches of caoutchouc was subjected to a pressure of two hundred tons. Great heat appeared to have been evolved, and the excessive elasticity of the caoutchouc caused a fly wheel of five tons weight to recoil with alarming violence."

The Chairman stated the subjects for discussion to be subsoil ploughing and draining. He requested Professor Mapes (who had proposed those subjects,) to gives his views.

Professor James J. Mapes, of New-Jersey. I cheerfully comply with the request of the Chairman. In the first place, I call attention of the Club to the effects of atmosphere upon the soil. The changes which are caused in it by atmospheric influences are obvious to some extent, but on a more close investigation, we find that it penetrates in well ploughed and subsoiled lands to a far greater depth; we find that, however dry it appears to be, yet it imparts moisture, and with it some of the vital elements of vegetable growth. It is well understood that the important one, ammonia, descends in showers, but not so well known that a constant supply is conveyed into soil by the invisible atoms of water containing ammonia, in the dryest day—so much so, that deeply pulverized soils do not suffer in hard droughts. When meadows are thus ploughed and sub-soiled, their grasses never run out. When, in shallow ploughed land, the root of wheat touches the hard subsoil, it ceases to tiller, and the ends of its delicate roots which have touched the subsoil, on close microscopic examination, are seen to be blunted and injured. To show the constancy of moisture in the air of the dryest days, a bar of iron at a temperature of only two or three degrees below that of the air, will show the small drops of water condensed upon it; this effect is constantly going on in the particles of the soil. The effect of air circulating in drains is seen at the ends by a more fresh and vigorous growth than in the middle sections of the drains. Besides ammonia from the air, we are constantly receiving that great element, carbon, derived from the carbonic acid of atmosphere; this and ammonia are thus constantly entering free soils. Some ask whether subsoiling is good for very wet lands. I say no, unless you underdrain the land. Soils properly underdrained and subsoiled give plants an early start, for they take in the heat as well as the atmosphere, with its carbon and ammonia. The brassica family (cabbage) will not give you a large crop without deep tillage. You must plough deep, and subsoil under that. Hitherto we have not had a proper figure in our subsoil ploughs. Mr. Weir, of New-Jersey, has now, under my advice, produced one, which I like, and which I here lay upon the table for examination. You see, gentlemen, that this lifts the subsoil at its heel about two inches and a half, which is all sufficient for breaking up the whole of it, and that this gradual and moderate rise from the share point renders the draught easy, in fact it is less by about one-half than some others that I have tried. I am asked, what then, after your underdraining and subsoiling, what increase of product have you? I say at least *twenty-five per cent!* and this profit is by no means limited to wet lands; almost all soils are greatly improved by this truly scientific operation. Underdrains receive the water through the soil; no opening is necessary on the surface of the drains; they are made of unglazed clay, and are so porous that the water forces through the pores, and the drain is constantly filled with pure water, and so carried off—all the elements of manure are left in the soil above. Make drains eighty feet apart, five feet deep, and then the water will be drawn off between them to that depth, except at the middle part, so that a section of the land would show a level surface, while the water line would be a curve five feet below the surface at each drain, and somewhat less at the middle. But these five feet cuts at 80 feet apart are as good as three feet cuts at 20 feet apart. All drains should follow the natural slope or inclination of the surface—not after the old herring-bone plan. The drains need not be wide; a few inches is as good as feet. Draining tools are now in use with which a man can dig a five feet deep drain of a few inches wide. I have paid ten cents per rod for digging my drains, so that, with the cost of the tiles, they have cost me twenty-five cents per rod, the outside expense.

Dr. Underhill, of Croton Point—The remarks just made by Professor Mapes are very important to farmers. The constant robbery of the soil is lamented deeply by all good men. How is it to be prevented? How are the requisite supplies to be restored to the lands? One grand source is the atmosphere, that is an immense magazine of the elements which are drawn by vegetating power. These float in solution in the air, leaves of plants take them in and they breath, but the root of a plant is its stomach, there the food, the pabulum must be applied. The roots incline to reach depths in the land which atmospheric air cannot reach. By deep tillage and pulverising of soil the air enters deeper and roots there receive a bountiful supply, all of which is impossible in shallow cultivated lands.

I must say that within ten years past my mind has undergone alteration as to sub-soiling and draining. It is certain that in wet lands, shallowed, the roots deluged with water cannot find and take up mucilage and sugar as in properly pulverized soils. I would say so of my grape vines. Much water makes poor grapes and poor wine. When the moisture is right, the saline constituents of manure give a delightful character and flavor to wine; this is due to the mineral elements. The roots will not do well in an undue proportion of water; blasting of the fruit is very apt to follow. Apples loose flavor. What a taste has the pine apple? What a flavor a pippin apple would have if grown under like circumstances? You would not be able to tell by taste what it was? Hay, grain, and all feed grown in too much wet show the defects in your milk and in the butter. They fail for the lack of activity, nourishment and high flavor of the feed. The necessary amount of the saccharine matter is not in it. You will find this proved in all the grapes, clovers and fruits. A load of hay can easily be grown worth as much as two loads of another crop.

It is now important that drain tiles should be made cheap as well as good. I am convinced of the great importance of their use, especially in all dense soils, and those are plenty. On high as well as on low lands deep tillage and under-draining can be, in great numbers of farms profitably used. The American Institute should offer such premiums for drain tiles as would lead to their extended manufacture and so lead to great improvements in our agriculture.

Professor Mapes.—There are a few exact points here settled. It was once thought that only very wet or very compact soils required draining. Now it is thought that even sandy lands are profited by it. Daniel Ellis, of Freehold, N. J., and John Black, of Burlington, N. J., have *sub-soiled their sandy lands!* They found that contrary to usual experience their corn blades *did not roll* when the summer's drought came on, and that in an unsuitable season for corn, the sub-soiled sand fields gave fair crops! There is no such thing now as *bad luck* in farming; there is too much good sound sense and science brought to bear on this subject to admit any longer the *bad luck system* to stand. We have tried the benefit of clover turned in as a fertilizer; but Indian corn sown broad cast and turned in is far richer. Plants have roots so small that in some cases they are almost invisible; and on microscopic observation we find that when the delicate ends of these minute fibres touch hard pan, or can no longer go their way, they become blunted, enlarge, and become diseased—so far injuring their plant. This delicate system we must provide for by insuring to them all their proper pabulum or food, for, unless we do so, we might as well undertake to feed a man by putting all his provisions on top of his hat!

The roots of Indian corn extend five and a half feet. Lucerne loves a subsoiled and underdrained land. You cannot over-dry a soil by under-drains. You cannot rid it of the water wanted by plants. Every rain brings down the ammonia, &c.; the soil takes that all up for the plants and lets nothing but the pure rainwater pass off. I have subsoiled to the depth of seventeen inches under a soil ploughed seventeen inches deep, making the whole a thorough tillage of *thirty-four inches deep*. This labor pays in the very first year's crop. The special manures, such as phosphates, give to a Ruta Baga crop more firmness of consistence, a longer keeping and better quality for cattle, and they bring more money than those raised the common way. You will see that subsoiling and underdraining take away the sourness from land, so that you may see that *sorrels will not grow on them*. Drains have been made with boards, &c., but they are poor things. Underdrains might be covered with what are called saddlers' chips, for these bits of leather will last under ground fifty years.

President Tallmadge wished to know how water penetrated these tiles.

Prof. Mapes replied—If you take this tile and cork up both ends tight and put it under water you will find it full of water in two minutes; it percolates through the pores of the unglazed tile. The tile should not have this flat bottom or sole; it should be formed like the long section of an egg, and the sharp end ought to be down so that the smallest stream of water could make its way along it.

President Tallmadge—How would you drain level land?

Prof. Mapes—By digging a well down to water, to this drains to be led from the confines, all the water in ordinary cases, would flow off by the well at the common level of the well-water. I have used a well at the rate of four thousand gallons an hour without materially sinking the surface. So if I had poured into it the same quantity in the same time it would all have gone off to the common level of the water in the well.

President Tallmadge—Do you consider underdraining proper and necessary in soils having gravel underlaid ?

Prof. Mapes.—I consider it useful in all cases to loosen the land deeply, to enable the roots of plants to penetrate as deep as they like, and that depth is far greater than is commonly supposed, and gives greater advantage to the plant especially in drought, to draw moisture from a depth, and in all weather to draw a uniform supply. No matter if the subsoil be pure gravel, we all know now that our fertilizers will not descend. Examine the earth directly under an old barn yard whose manure has lain an hundred years, and you will find it as free from all manure as gravel of the surface, which never was touched. Unless this was true, our wells would become saturated with manure.

President Tallmadge.—A few years ago I had a barn consumed by fire, and since that the site of the barn and yard is distinctly visible in the crops growing on the field where it once stood. This is in confirmation, it seems to me, of the fact that manures remain at the surface, or do not descend below the soil.

Prof. Mapes.—The progress of fertilization over under-drain lands is from the surface over the drain towards the middle; between drains this increases every year until they meet. Ruta Bagas will be four times larger over the drains than in the middle between two drains.

The Secretary noticed the condition of the gravelly subsoil under the barn yard of the Bayard country seat, which had been occupied as a manure yard for about two hundred years. On

that spot to cast it into the Hudson river, som twenty-years ago, he remarked that the gravel under laid was as free from all signs of manure as the sand of the sea shore.

Prof. Mapes.—The whole experiment is readily tried, as I have done it, in a barrel of sand, with surface soil, clay, &c. The liquid manure will all be taken up, and nothing but pure water will pass through.

President Tallmadge.—I am delighted at this method of gaining information. Let me comment a little. On the surface of land we have a few inches of soil commonly dark in color, then below some clay, perhaps yellow; then often either some hard pan, dense, or perhaps sand or gravel. Through all these the atmospheric influences hardly penetrate. Then we till it deeply and thus enable them to enter their powerful fertilizing properties, give room to the entrance of the roots of plants. The system of roots of plants is beautifully seen by subjecting them to a gentle but complete washing. We are astonished at their wonderful construction, and learn lessons most important as to their actual functions in supplying their plant with all its pabulum, and also how we should prepare our soils for them, and how we avoid trespassing on their indispensible ramifications. I feel more and more strongly the value of science faithfully and practically applied to agriculture. All show the necessity of close study.

The Secretary said, that he had very often reflected upon the great principle, by which our greatest, as well as our least plants, contrary to the constant power of gravity, rise from an inch high to nearly three hundred feet of altitude, carrying up weight after weight, 'til at last, like the great gum tree of Australasia, the weight lifted upwards is *four hundred tons!!* Even small plants lift stones, throw aside the earth, force room for their roots, &c.

The Chairman observed, that heretofore he had been opposed to under-draining on account of the expense, and of our peculiarly dry climate; for such was the quantity of hot sun we had during summer, and the warm seasons generally, that we had no surplus moisture left to be conveyed off by artificial means, especially means so expensive as under-draining. In case of swamps, morasses, or very wet farms, situated low, receiving the drains of hills and higher grounds, it may be necessary to under-drain these. Such cases, though, are few compared with our whole country. From the account Professor Mapes gives us, of the expense of draining his farm, (about fifteen dollars an acre,) it is certainly lower than it has been generally thought it would be, in our country.

Professor Mapes.—This reduction of expense is owing to better implements and system. The narrow drain is just as effectual as a large one, so that by less digging, and a well adapted ditching spade, a man can dig several feet deep, the cost is lessened to one-half of that of only one year ago.

Dr. Underhill, of Croton Point, offered the following resolution, viz:

"Whereas, the benefits of under-draining, by which a greatly increased production in our crops may be secured, have not been obtained by our farmers, from the difficulty of procuring suitable and cheap tiles for the purpose. Therefore,

"*Resolved*, That it be recommended by this Club, to the American Institute, to offer a premium for the best and cheapest tiles, to secure all the benefits of under-draining for agricultural purposes."

Carried unanimously

President Tallmadge moved that the next subject for consideration of the Club, be "*Education of Farmers.*" He remarked, that in making this motion, his purpose was to call forth intelligence from all who may please to give it—for some positive improvement in agricultural intelligence, for I am pained to say that we are backward. It is a melancholy truth that we are so notwithstanding all our boast.

France has about one hundred and thirty such schools, and the culture of the crops of the fields, and the fruits of the garden, are *cared for by her rulers!* They are cherished! We need a little of all. Massachusetts and Connecticut have just asked the question—"Has New-York an Agricultural School yet?" I am pained to reply, no. There are more than thirty in Ireland, established by the local government. If the members of this Club will come prepared at the next meeting, we may cause great advantages ultimately to flow from this small beginning. The aids of chemistry must form part of the ordinary business of the farmer. I hope that if this proposition be deemed useful, a competent committee may be appointed to examine this subject thoroughly and report a plan of a character so practicable as to satisfy public judgment. Some four years ago, we had made a provisional arrangement for the purchase of nearly two hundred acres for an experimental farm; the cost of this was to be about *twenty-one or two thousand dollars.* We made earnest application to the Legislature for aid to complete this. We failed. The same land is now worth about *one hundred and fifty thousand dollars!* We had assured the Legislature that the State *could not lose by the purchase!* That opportunity has gone away. Now let us look out for another.

Professor Mapes hoped that this subject might not be pressed at present. Several States are now endeavoring to create such schools. Let us see how they succeed. I think that schools are first wanted to make *suitable legislators.* I have spent six weeks in laborious attempts to persuade our New-Jersey Legislature to commence a proper system of instruction in agriculture in vain. It was opposed by so-called farmers, who *can't raise oats that won't lodge!* England now, without such schools, beats France! We should begin by teaching farmers as far as possible in their own way, on their own farms. A simple competent teacher could do more with them in that way than colleges can.

General Chandler approved of the proposition of the President and wished that it might not be deferred. It is time that this important subject should be amply discussed, and, if possible, a practicable plan for the diffusion of agricultural knowledge arrived at.

Professor Mapes moved an extra meeting of the Club for Tuesday next. Carried.

Subject—Use of phosphate of lime in agriculture. Adopted.

The Club adjourned. H. MEIGS, *Secretary.*

Farmer's Club, May 20th, 1851.

UNDER DRAINING.—PHOSPHATE OF LIME IN AGRICULTURE.

JUDGE VAN WYCK in the Chair.

HENRY MEIGS, Secretary.

The Secretary remarked that at the last meeting Professor Mapes, of New-Jersey, gave a very important lesson in under draining, proving that by hand implements, ditches can be dug at about half the cost hitherto experienced. That resulted from making them only a few inches wide, instead of many. I now have the pleasure to read from the May number of the London *Farmers' Magazine*, an important article on the same subject, printed in London, you perceive, only twenty days ago:

EXTRACT.

The grand desideratum—cheap drains.

Mr. Cotgreave, of the Rake farm, near Eccleston, in the neighborhood of Chester, has at length vindicated his county, long stigmatized as the most backward of all English counties in adopting the improvements of the age, in everything which relates to the amelioration of the soil. By proper drainage, the clay farms will become very productive, and now it can be executed for less than half cost. The Marquis of Westminster, who is extensively engaged in draining his estates, and other eminent agriculturists in the neighborhood, approve Mr. Cotgreave's ingenious invention. Mr. Cotgreave's principle consists of a series of ploughs derived from the *carpenters' plane;* with the exception of the main drains all the work, even to the obtaining the perfect level of the drain, is performed by the plough plane. Mr. Cotgreave has so adapted his plough that with four horses he can throw out a drain from four to five feet deep. The saving of time is another material object. The work by this process is almost incredibly expeditious, and very little damage is done to the surface; indeed, in grass lands a heavy roller will repair all damages. The cost of workmanship is half the price of manual labor on the present system, and the time occupied *one-tenth,* while the work, to say the very least, is as efficiently and durably performed.

The working of the plough plane many will doubt. We did so; but we saw and were convinced of its powers and efficiency. All who have witnessed the operation of it are unanimous in their approbation of the plan and their conviction of its full and complete success.

Ten men and four horses constitute the staff. Without distressing either men or horses, Mr. Cotgreave commences draining two statute acres—4,840 square yards, or 43,560 square feet, each—in the morning, and finally completes, that is, cuts the drains (including the main drain,) lays the pipe, fills in and makes good the surface of one statute acre, and half-prepares the second to be ready for work the next day. These plough planes have regulators, which are screws, and by which the plane can be made to shave two, four, five, or six inches thick. When a stone or other obstruction is in the way, the coulter of the plough plane protects the share, and a hooked instrument with a lever is used to extract it before the plough comes back again. One of its great recommendations is, that it is adapted to every variety and condition of soil—can be worked almost independently of the weather unless the ground be too deeply frozen. In fact, those who have witnessed the plough at work are at a loss which most to admire, the absence of complexity in the contrivance or the rapidity and perfect success of the operation. The land owner ought always to have the pipes of the mains and the tributaries on the field ready to be laid down. Cotgreave begins the work with the spade and completes the mains before he begins the tributaries; these he commences by casting out by the plough a sod six inches wide, on the left side of the intended drain over the two acres. This is an immediate service in wet land for that immediately begins to drain off. He then returns to the first acre and runs his plough plane, casts out the soil and subsoil on the right hand of the drains. In four drafts he cuts down to eighteen inches deep by six inches wide. The first shave being six inches, the last three, four inches each. He then takes another plough which cuts six inches deep by two wide; he then lays the pipes by threading them on a half-inch iron bar, one end of which trails in the drain. The rapidity and perfectness with which the pipes are then laid is surprising. A man follows with a sort of paddle with which he completely adjusts the pipes, and supplies the place of damaged pipes with sound ones. The drain is now ready for filling in, which is rapidly done, and then the whole clod, first turned up in almost one entire piece, is rolled on to its bed. We estimate the benefit of Cotgreave's plan to be a saving of *one-half* the cost, and *nine-tenths* of the time hitherto required.

The Secretary read his translation of an article on the *plant louse*, in the Annales de la Societe Centrale D'Horticulture, Paris 1851.

"The wool louse, the *aphis mali* or apple louse. All the enemies of plants are for the most part as ancient as the plants themselves. For we do not believe that divine power creates now-a-days new physical enemies as the world grows older. Europe, Asia, and Africa were known for many thousands of years; but America was for the first time discovered by the Genoese Christopher Columbus in 1492. The fourth part of the world has now been known less than four hundred years. Before this discovery the plant louse was utterly unknown, certainly in Europe. It arrived (we know not how) sometime about the commencement of the present century. I first remember it in Paris in 1830, and published an account of it in the *Annales.* Since then it has multiplied and committed great ravages among our young apple trees in the nurseries of Paris and its environs. The London Horticultural Society has described it under the name *Eriosome.* Academies offered premiums for its destruction Fumigations, cream of lime, powdered lime kill many but left more untouched—the impossibility of applying remedies to large trees. An Englishman rubbed his trees with *old urine*, and got entirely rid of the louse. Soft soap has been tried. Mr. Viaril, nurseryman at Rouen, says that he has found out an infallible remedy which destroys them all; he demands a high price for his secret, so high that I dare not ask the Society to ask him for it. He says: 'My nursery of sixty thousand trees has not a plant louse in it, while my neighbors' are devoured by them."

Chairman. The subject for this day is the use of lime in agriculture, proposed by Prof. James J. Mapes of New-Jersey, who has not arrived. We shall be glad to hear Dr. Antisell on the subject.

Dr. Antisell. I cheerfully comply and will call the attention of members to the clear proof of the necessity of the presence of phosphate of lime in soils. We observe that when animals pastured on meadows fall off in flesh it is ascertained to be owing to the fact that the meadow has been exhausted of its phosphate of lime. A large animal takes from the pasture an hundred pounds of it to construct his bones. This eminent loss must be supplied or the meadow loses its value. So that is the business of an intelligent farmer to attend to this or let his land go to unfertility. We should apply in this case urine, calcined or raw bones, salt, or phosphoric acid. In a lake in Thibet there is contained so much phosphoric acid that being used on the meadows it continually fertilizes them. All classes of plants are benefited by it; all the cereals, grapes, sugar cane, seeds or the sugar in them, the potato, tuberous plants, and almost all plants. My experience has found the important part it performs in vegetation. In Ireland, some years ago, I was applied to for instruction how to raise large crops of turnips on a particular farm of thirty-five acres. I analyzed the soil; it was rather good clay ground, drained and wanted nothing, for any ordinary crop, but for a prize crop, I recommended one hundred and five pounds weight of crushed bones per acre, for a turnip crop, ground ploughed twice and the bone spread broad-cast. That land had commonly yielded from twenty-five to thirty tons of turnips per acre, and now gave *fifty-two tons of turnips per acre*, and it gave wheat in increased amount afterwards. Phosphate of lime increases the power of plants to fill their grain with more gluten—nutritive matter. When well applied to wheat land the wheat will be found to contain seventeen per cent of gluten, in place of the common proportion of twelve per cent. Both quantity and quality of the flour are gained. A like benefit is found in grasses which are duly supplied with this phosphate. Animals fed on these grasses soon show their great improvement by arriving at maturity a year sooner, and of better flesh. Fifty pounds weight per acre are commonly taken off alluvial lands per annum. All that is to be done is to add, say fifty-six pounds, equal to about one bushel of phosphate of lime, to every crop. It is not to be deemed an amendment of soil, but as a manure. Guano and Poudrette contain in it considerable quantities.

When we have a due share of moisture, this phosphate forces vegetation rapidly. In very hot, dry weather a good deal of guano is lost by evaporation. The animal matter of guano is not a durable element of this manure, but the phosphate is good for the following year. In bones this is different; crushed bones, or bone dust, are good for the first year's crop. Meadows should be top-dressed with it. When dissolved in sulphuric acid, one-half the amount of bone is wasted. We allow two hundred pounds weight of crushed bone to an acre, and but one hundred of the dissolved bone. Put a cask in the ground, put in one hundred weight of bone, and sprinkle them with water. After twenty-four hours they begin to smell and bubble; then dilute ten pounds weight of vitriol in three or four times as much water, and pour over the bones; stir them well, and they will soon be reduced to a creamy state. Make a compost of bones, muck, leaves, &c. Of this, seventy-five pounds of bone in the compost answer well for one acre. The strongest effect will apppear the first year, but it is good for three or four years after.

Chairman.—Where can the mineral phosporite be obtained?

Dr. Antisell.—Professor Emmons has discovered a mine of it near Crown Point, Lake Champlain. On analysis it is found to contain ninety-two per cent of phosphate of lime, with salts and fluate of lime. He says that there is enough of it there to serve the whole United States for many years. There is a considerable mass in Jersey, near the zinc mines, which contains about ninety-three per cent of the phosphate. This phosphorite is readily crushed to powder, almost by the pressure of a pen-knife blade. The vein of it is said to be about three or four feet under the surface, to be about eight feet wide and is traced about two and a half miles in length. The transit from the mine to New-York is by water, with the exception of some two miles and-a-half land carriage. This article, as manure, would be profitable to such farms as require the addition of this phosphate, at seventy cents a bushel. There is but one large mine of it known in Europe, and that is in Estremadura, in Spain. That phosphorite is very white. A few tons of it have been sold at fifty pounds sterling a ton. There is no water carriage for it. In Hungary, in some places, it is found encrusting the surface of the ground annually. In England the coprolite is found in considerable quantities in green sand. This coprolite is an excrement of the antediluvian Saurians—the monster lizards of that early period. Phosphorus is extracted from these coprolites for use in fire works.

Chairman.—Phosphate of lime is one of the most important of the special manures; it is found more or less in all plants and especially the useful ones. This shows that it is generally their food and is necessary to their vigorous growth and full development. Some of them, it is said, will not mature perfectly without it, and a considerable portion of it too; most of the cereals or grain plants contain it; wheat a good deal of it; Indian corn, oats, etc. All the nutritious grasses contain it. It is the bone forming element, and the animal frame could not be built up without it; this at once shows the necessity of it in plants, as all animal creation feed and live upon these, or on such animals as do. Plants look sickly and do not thrive if they cannot get it, even if the soil is good in other respects but deficient in this. Here is the wisdom of Providence that man may see in an early stage the symptoms of disease, and exercise his intellect and industry to discover the cause, and, like a good physician, promptly apply the remedy.

Professor Antisell has given us a luminous and correct history of phosphate of lime and its uses in agriculture, where it exists and how procured, and the best way of preparing it for use. It is to be found in the mineral as well as the animal and vegetable world. If animals and vegetables could be kept in the localities where reared and grown till decay and death, then, perhaps, their remains would keep up a supply of the article; but they are sold off and removed to distant places, and much of their remains wasted and lost by removal, and others applied to new and remote localities; hence the deficiency must be made up wherever it occurs by these changes, from other sources. Farmers must look abroad for the article, and with this as with most other things that are essential to their comforts and the prosperity of their business, buy it wherever they can get it cheapest or best and purest. Here I think it my duty to make known (as I have done on previous occasions,) the hazard farmers run in buying not only this article of phosphate of lime, or bone-earth, but most other special manures. It is the imperative duty of this Club, located as it is, in something like a watch-tower, this great commercial city, whenever good information arrives from any quarter for the farmers of the land, to announce it, that they may avail themselves of it, if they see fit. It is equally its duty, too, when evil threatens the same important interest, no matter from whence it comes, to sound the alarm, that it may be shunned, if thought proper. One of the latest London periodicals brought us an account of the official proceedings of a meeting of the Farmers' Club of London, in March last, on the important subject of the adulteration of special or artificial manures. Among those most adulterated, or where the practice has prevailed to the greatest extent, are phosphate of lime (the very article under discussion) and guano, and the reason why these had been selected for such abominable frauds is that they are most in demand and most wanted. Professor Nesbitt, chemist of the Royal Agricultural Society of England, who lectured before the Club on the subject, says that Professor Way, who stands high as a chemist, found on analysis, the best Peruvian guano to contain seventeen per cent. of ammonia. He (Professor Nesbitt) had examined many samples of guano, and only a few had come up to that; generally it contained from fourteen to fifteen per cent. There may have been good reasons for this difference: guano is sometimes deteriorated on the voyage, or in putting it on board of ships. The professor further states that ordinary Peruvian guano contains from eighteen to twenty-two per cent. of phosphate of lime. Ammonia and phosphate of lime are by far the most valuable ingredients of guano. The professor also examined many specimens of adulterated guano. Some of them contained only a trace of ammonia, and ten or twelve per cent. of phosphate of lime, others two and three per cent. of ammonia, and a trace of phosphate of lime. Chemists mean by a "*trace*," a particle so small that it is not to be appreciated, it is worthless. Professor N. stated that he had received letters from various gentlemen lately on the subject, including Professor Calvert, of Manchester, and Professor Anderson, of Edinburgh, corroborating the fact of the immense adulteration of special or artificial manures. These gentlemen have both analyzed samples of guano highly adulterated. Professor Calvert stated in a letter received that very day, that he had lately analyzed some that contained from seventy to eighty per cent. of sand. "Numbers of men in London," says Professor Nesbitt, "are now making from two to three thousand pounds sterling per year by the sale of adulterated special manure. I have placed the matter," says the Professor, "before you because I think it ought to go forth to the agricultural world that farmers are being regularly and systematically cheated, that they are imposed upon in this matter, that they are constantly buying sand for guano, and oyster shells for bones or phosphate of lime."

The Professor further states that he had received letters recently from eminent chemists in France on the adulteration of manures there, where some roll seeds in powder, and others steep them in certain liquids, and pretend that the seed will grow and mature after this without any further trouble, imparting to them a certain mysterious charm. The French savans say this is too ridiculous to last, the evil will cure itself. It is not much more ridiculous than the system proposed a few years since, and that by men eminent as chemists, to make use of only mineral manure, to reduce all the farm yard manure to ashes by burning, make use of the ashes, and thus have all the virtue of one thousand tons of barn yard manure concentrated in a small compass; that this would save the expense of labor and carriage in moving it about. This system, it is believed, is pretty much abandoned; at any rate, very little has been heard of it lately. It was either too ridiculous to try, or the few practical converts, if it ever had any, gave no account of their experiments, as they must in doing this have exposed their own weakness and credulity. The rebuke the Scotch laird, who was a convert to the system when it first came out, met with from his steward or manager of his estate, was excellent. "Well, Donald," he says, "if these improvements go on, the time will soon come when we shall be able to carry the manure for our farms in our snuff-boxes." Donald replied, "When that time comes, my lord, I think we shall be able to carry our crops in our vest pockets." This reply of Donald's probably saved the credulous laird from the mortification of being convinced of the ridiculousness of the system by his own experiment. Our friend, the Secretary of our Club, who is ever on the look-out for such things, has introduced to us information received by one of the last arrivals of a new system of under-draining in England, which will reduce the expense more than half, perhaps two-thirds, of what it was on the old plan. This is important to the agricultural world, if correct, and it appears to be from experiments actually made. This will enable our farmers to go into it here more extensively, if they see fit, so they can do it without ruining or embarrassing themselves by the operation—another proof of the advantage of a Farmer's Club located in such cities as New-York and London, where all information centres, and where it can be diffused at the earliest day; not only that which relates to the commercial world, but to all the industrial branches of a country.

Another occurrence Professor Nesbitt relates, which actually happened, to show the extent of the adulteration of special manures in England. A farmer from the interior arrived in London to purchase guano; he had been cheated before, with some of his neighbors, and he was determined, if possible, to get a pure article. Shortly after his arrival, he saw in the papers an account of a vessel coming up the river Thames, direct from sea, with a cargo of fresh guano, and which would reach a particular wharf at a certain hour. He had no time to lose; he procured a horse and rode down under whip and spur, and got there just as the vessel was hauling in. He went on board, and, as all seemed fair, he made his purchase. Alas, poor man! After his superior activity and cunning, he was cheated, as the vessel had been supplied by small boats from the shore, while coming up the river, with sand and clay, the usual articles of adulteration, which were speedily and dexterously mixed with the guano, and which the farmer was afterwards satisfied of, to his loss and mortification.

Some of these adulterated manures we fear reach our country, as most of the guano which comes here is from England; and complaints are often heard that farmers among us receive no benefit from guano, and pay pretty dearly for it too. The same, no doubt, happens with phosphate of lime; and this, or some of it, receives a pretty liberal dose of oyster shells or something else more worthless, before its sale. Oyster shells are generally used in England to adulterate phosphate of lime, and resemble it more, perhaps, than anything else, and make the fraud less liable to detection. The best way for our farmers, in case of phosphate of lime, is to buy bones in their natural state, and break them up into small pieces, or dissolve them in sulphuric acid, or oil of vitriol, in the way Prof. Antisell has so well described; then they will be sure of getting a pure article. As to guano, our farmers cannot so easily protect themselves against fraud, as at least nineteen-twentieths of what comes to America comes from Europe, and no doubt most of it comes well adulterated; if they must and will have the article, the only way to be safe is to have it analyzed by a competent person before purchasing it.

Mr. Meigs.—The adulteration of manure is an atrocious crime. The s——l that does it deserves to be prohibited the use of bread. There is another adulteration which our general Government has done well to destroy; that is the adulteration of drugs. If Government should protect our farmers likewise, it would be in the first order of its duty.

Dr. Antisell remarked that the adulteration of guano in England was extraordinary. It was found that when some justly-suspicious farmer went down the Thames to see the cargo of guano, and was satisfied of its purity, he was, nevertheless, cheated; for as the vessel came up, she was supplied with marl and sand to mix with it, so that when she landed her cargo the poor farmer paid his pound sterling for tons of English dirt instead of foreign guano. This mixture of guano and dirt was very deceptive, for the smell of the mixture was much stronger than the true guano. To one load of guano they added two loads of marl. A scientific analysis is first made of the cargo; this is printed for the security of the good but jealous farmer. After the analysis they adulterate with marl, &c.

The urine of cities is all wasted. Sewerage should provide that it be run upon masses of carbonate; which mixed with it, is easily managed for transportation to the lands. The animal matter in it is very valuable, as well as the phosphate of lime. In Aberdeen, Scotland, the sewerage is adapted to this purpose, and each human being is valued at two shillings and nine pence per head, or about five shillings of New-York currency.

Subjects for next meeting—Phosphate of Lime, Draining, and the proper way to teach agriculture.

Adjourned to Tuesday next, at noon.

H. MEIGS, *Secretary.*

[The following letter from General Dearborn was duly received and read to the Club. We publish it as containing a merited compliment to an esteemed friend and co-laborer, as well as valuable suggestions on matters pertaining to the diffusion of agricultural intelligence. The idea of appropriating Mount Vernon as a national agricultural school and garden of plants, meets the most cordial approbation of the Club.]

Hawthorn Cottage,
Roxbury, Mass., May 7th, 1851.

My Dear Sir,—During the past four or five months, I have occasionally received—and I presume from you—numbers of the newspaper called the "*New-Yorker,*" containing accounts of the proceedings of the Farmers' Club, and have been deeply interested, and derived very valuable information, from the statements which have been made, at your weekly meetings, in relation to the numerous departments of rural economy.

It is thus instruction is concentrated, and then diffused, over the whole country; and you are eminently entitled to the thanks of all your agricultural colaborers, for the efficient services, which you have rendered in all the branches of rustic industry. Professor Mapes has been one of the most useful—aye, the most distinguished disseminator of intelligence, in relation to the *scientific principles to the practical operations* of the cultivation of the soil. Being himself a farmer and gardener, the results of his experiments are precious TRUTHS, which cannot be ascertained and established in any other manner. He does what science dictates, as a SKILLFUL TILLER OF THE EARTH, instead of merely *informing* the uneducated farmer and gardener what abstract principles of chemistry and geology can be usefully applied in the prosecution of their labors. The latter can *adopt* the process, when instructed as to the *mode;* and the learned Professor has a very remarkably lucid and intelligible method of imparting knowledge, to all classes of people, who can *read* and are accustomed to *work* in a field or garden. Like all men of real genius and intelligence he can come down into the rank and file of the multitude, and relate to them what it is important they should know, in terms leveled to their capacities. Many may understand the laws of science, but never having applied them, are unqualified to teach others. To do this is an important art, and all can comprehend a processs when it has been practically illustrated, by him who *knows* and can *execute* what is required.

The account he gave of his experiments on subsoil ploughing and draining is of the first consequence, and cannot fail of inducing thousands of farmers and gardeners to adopt both of these important modes of increasing the fertility of their grounds. One such practical chemist can do more in aid of cultivation than has been accomplished by all the theoretical books, and all the societies which have appeared in this, or any other country. For to render a book useful in the arts, it must be written by a scientific artist. Art without science is impotent, and science without artistical application is worthless.

The efforts of societies are unavailing unless they collect and reflect back upon the people the results of the experiments, the investigations and the inductions, and demonstrations of illustrious individuals. There are no other modes of arriving at facts and truths. Thus it is, that the French National Academy have done so much. Mere theory is not tolerated until established by one of the methods which have been named, and it is the cultivation of science and art in the work-shop, and the culture of the soil, as well as every other branch of human industry and inquiry which has accomplished so much within the last half century. Philosophy now walks side by side with every man, who *works well*, whether physically or intellectually; and the march of the human race is consequently so energetic, direct and confident, that the ultimate height it will attain can be confidently anticipated from the glorious results which have been realized in our own day.

As the basis of all other departments of industry--of our prosperity, wealth, power, and national grandeur, is agriculture, why has it not commanded more attention? Why has it not been more honored? No patriotic citizen can doubt that it is the most important subject which can claim the consideration of the government. Washington was fully impressed with the magnitude of that chief source of aggrandisement, and repeatedly recommended it to the serious attention of Congress; but as yet nothing has been done for its promotion.

We rightfully and wisely have established military and naval academies, fortifications, arsenals, armories, navy yards, artificial harbors, sea-coast and lake beacon lights, and at last a "light-house of the skies"—but no school, no experimental farm, no garden of plants for the development of the resources of our agricultural domain and for giving an impulse to that *labor which feeds and clothes the whole people, and furnishes over* $100,000,000 *of products for exportation*—a labor which occupies at least seven-tenths of the entire population.

We must hope on and ever, that the day is not distant when public opinion will induce a more enlightened policy on the part of Congress, and then we shall be distinguished for our agriculture, as we are for our navigation and our internal and foreign commerce.

Your translations of articles from French works upon the "Culture of melon from slips," the "Preservation of Fruits," and the account of the Date, are valuable contributions to the fund of horticultural, pomological, and botanical information.

With assurance of most sincere respect
and esteem, your most obedient serv't,
H. A. S. DEARBORN.

To Henry Meigs, Esq., Secretary Farmers' Club, American Institute.

P. S.—If Congress would establish an experimental farm and garden, or schools of instruction in each of these branches of tillage, in Washington, including at least a thousand acres, and place Prof. Mapes, our distinguished Dr. Chas. T. Jackson, and like able men, in the chairs of Chemistry, Geology, &c., &c., as connected with the cultivation of the earth, and well-educated Botanists, Farmers and Gardeners, as conductors of the experiments, more could be done to promote all the branches of rural industry than it is possible to effect in all other ways, and this, too, within a very few years. We annually expend immense sums for purposes which are absolutely insignificant in comparison with the benefit which such a national institution, would confer. Each state would then have such an institution, and we should not, as for the past two hundred years, be going on from bad to worse in our agricultural labors—or rather remain stationary, which is as fatal as falling in the rear of the age; for to halt is as impolitic as to retrograde, as both are the results of imbecility and are equally disastrous in their consequences.

I wrote a letter to the Hon. J. R. Poinsett, which was published in the *National Intelligencer* of January 21, 1843, on the expediency of establishing an experimental farm and garden on the public grounds attached to the Capitol and President's house; but as the Washington estate at Mount Vernon can now be purchased, I think that is the very site for such an establishment, and I trust that the next Congress will not fail of procuring that consecrated home of the Father of his Country for such an important and most appropriate purpose.

CROSSING AND BREEDING CATTLE.

Remarks of Mr. Thomas Bell, of Morrisania, made at a former meeting of the Farmers' Club, on the subject of cattle.

Mr. Bell rose and addressed the chair as follows :

I have heard much and many practical remarks to-day on the subject of the Devon cattle and other breeds, but I believe the Durham stock is the best that has ever been introduced into this country. I breed from a Durham bull on the native cow, and by this method of breeding I have produced the best milkers for a dairy that ever have been produced in this or any other country—far preferable to the native cow. We beat the English breeders by this plan: while the English native milker will not yield more than nine quarts a day the year round, I have from my own dairy, at Morrisania, milked eleven quarts a day on an average, for the year round, from a cross of the Durham and native.

There are indeed some rare exceptions to this rule, but they are few.

The best one I ever saw was a native cow, which I have owned eleven years. She was called "The Old Judge." She has yielded me more than twelve quarts a day for eleven years past, at my dairy.

Some days she milked twenty-five quarts a day.

She had eleven calves in eleven years, and has produced 37,500 quarts of milk while I owned her, which, at 4 cents a quart, equals a sale of milk from this cow of $1,500. I bought her from a friend in Greene County, in this State, Judge Van Buren, for $25. She was raised on the hills west of the Hudson river, and of the *native stock*, and sent to me as an unmanageable animal. She kicked and hooked so that she could not be safely milked. I broke her so that she became docile. I cured the kicking by taking the right fore leg and doubling it up with a rope, or bandage while milking.

I manage all unruly cows this way when milked.

This cross of Durham do the best for fattening after milking, better than any of the imported or native breeds.

The native stock are always improved by a cross on the native cow with a foreign bull.

I am altogether in favor of the cross of Durham upon the native stock, both for milking and fattening. I know of none better.

The foreign stock, when introduced into our country, do not keep their health so well as the native stock, and lose much by a change of climate and methods of feeding. The foreign stock should be imported for crossing alone.

The native stock does not equal the Durham for crossing. This stock, when crossed with the native, will produce better beef and milk than the native or any other breed. This is my experience, and I have been in the business of cattle growing for more than twenty years. I am going to Europe to find the best breeds to bring over to cross on our native stock. I intend to try all the different European races, and will endeavor to produce a cross race preferable to any others which can now be found.

So far as my experience goes, I would use the foreign race of cattle alone to cross on the native. There is a very great advantage in crossing on the native cow in good health and condition, as during *gestation*.

The animal does not undergo the process of ACCLIMATION which all foreign cattle when brought here are compelled to suffer. The change from one climate to another always affects animals and plants injuriously, in a greater or less degree. No two places on the globe, even in the same latitude, possess the same physical condition of plants, or animals or soil. And the change on a given longitude is much greater. No animals or plants will flourish in a strange place or country until they pass through an acclimation. This process often takes almost one generation to accomplish it thoroughly.

Mr. Bell was followed in his remarks by Professor Mapes, who said that he had a long time observed that animals materially changed their condition by being transported from one place to another. He said, we find that animals which range hills and mountains have a broad full chest, while those in low sections have small chests and are subject to consumption; by climbing hills and mountains the chest is made healthy—the air is more rarified and expands the air-cells of the lungs—the blood is better purified as it passes through the lungs, by the mountain air, and the air itself is much more pure and free from miasma and noxious gases on the mountain and hill sides than in the valleys. He thought that all animals grew to greater perfection in high grounds than in low situations. Cattle improved better and faster on mountain pastures than in plains.

Dairies furnished sweeter and better milk on hilly situations than in low grounds.

The animals kept on hills were healthier and were more easily fattened with the same food on hills than in low situations.

AMERICAN INSTITUTE,
Farmers' Club, *May 27th*, 1851.

Judge VAN WYCK in the Chair; HENRY MEIGS, Secretary.

The Secretary remarked that we are constantly using the word climate without recollecting precisely the meaning of it. I therefore offer the following extracts from our books in relation to it.

The word is from the Greek word κλινω to *incline.*

The ancient geographers divided the space between the poles and the equator into thirty equal parts, on both sides of the equator, and called them climates or inclinations. Twenty-four of these extended from the equator to the polar circle—the other six from thence to the pole. The first they called half-hour climates, because, from one to another, the longest day receives an augmentation of half an hour. The others were called month climates, because, between any two of them, the difference of time of perpetual sunshine is one month. The first half-hour climate extends from the equator to the parallel, where the longest day is twelve hours and-a-half; the second, where it is thirteen hours, &c. Thus, New-York is in the seventh climate, and London in the tenth.

The Secretary offered the following brief extract from our books:

LIME.—German *Leim.*—Glue, *Sulphate of.*—Selenite or Gypsum is native; can be made by adding sulphuric acid to solution of the salts of lime. It is composed of lime 28×40 sulphuric acid. Its crystals include two atoms = 18 of water.

PLASTER OF PARIS.—The crystalized sulphurates heated, part with their water and fall into the fine powder, so called.

Phosphate of.—Found native. Apatite from *απαταω*, I deceive, because it looks like other metals. It is subphosphate—a phosphorite when native.

Carbonate of.—Limestone, chalk and other kinds of limestone. At a red heat these throw off their carbonic acid; it is then quick lime. This sprinkled with water heats and crumbles into dry powder, now called hydrate of lime. It is also called alkaline earth.

CALCIUM.—The metal, first demonstrated such by Davy, in 1807.

CHLORIDE.—χλωρος green, the color of the gas, discovered by Scheele, in 1774, altered by French chemists to oxygenated muriatic acid. Sir H. Davy altered this in 1809 to chlorine, which exists as a simple substance at common temperatures and pressures in a gaseous state; but when subjected to a pressure of four atmospheres, is condensed into a transparent yellow fluid which is a non-conductor of electricity, one hundred cubic inches of it weigh seventy-six and seventy-seven grains. Water absorbs twice its volume, and acquires a yellow color. It has a suffocating odor. A taper burns in it with a red, smoky flame, but soon goes out. It destroys almost all vegetable and animal colors. Hence its use in bleaching. Also destroys all putrid odors of animal or vegetable. The great natural source of it is common salt, which has sixty per cent. of it. It is procured by decomposing common salt by joint agency of sulphuric acid and peroxide of magnesia; three parts salt to one of magnesia, well mixed, placed in a retort with two parts of sulphuric acid, previously diluted with two parts of water. Apply gentle heat and the chlorine comes over.

Mix muriatic acid with half its weight of black oxide of manganese, collect the gas over water and keep it in glass with glass stoppers.

[Revue Horticole, Aug. 1850. Translated by H. Meigs.]

THE GARDENS OF FRANCE.

France is the garden of Europe; this is the secret thought of the numerous visitors of our country. We here present ourselves merely as the echo of the language of benevolent strangers who travel through our provinces with attention or come to stay among us.

It would be useless for us to undertake to justify this opinion, so very flattering to our national self-love, unless we had other motives to speak on this important subject, and to draw the eyes of all men to it. But an observer, a practical farmer, animated with warm desire to discover general ameliorations in agriculture, will have pleasure and profit in looking about him.

France is not a country of level plains, where the eye can at once embrace a vast space of monotonous uniformity—quite the contrary; the surface of our soil is every where formed of (*mamelons*) gentle risings covered with verdure, or cultivated plains intersected by undulating vallies, watered by numerous large and small winding streams, circulating through green meadows (prairies) and smiling banks. The mountains of softened aspect are clad with bushes and woods; the animated sea-shores, the moss-covered cottages of the inhabitants and laborers visible everywhere. Has not this rapid description already shown that the great whole forms one immense natural garden, framed in by the ocean on the West, the Pyrenees and the Mediterranean on the

South, the Alps on the East, and the Provinces of the River Rhine and Belgium on the North. Our rivers all flow on so gently that peril on them is not known; our cities are populous, our villages numerous, our population animated, lively, possessing rich vineyards, productive fields and numerous herds of animals. Almost everywhere a pure bright blue sky prevails over us. Our climate is mild, temperate—almost without winter. The springs and summers warm; but our lengthened autumns keep up a perpetual verdure, permitting also active vegetation of all sorts, grain abundant, esteemed wines, excellent vegetables, and delicious fruits. To the travellers from northern nations, is not our country really one whole garden when compared with their cold, cloudy regions so rapidly stripped of their verdure? And is it not so to the traveller from the south, where a burning sun dries up every thing almost. All other nations seem to be placed around us to enjoy the advantages of our happy situation. France resembles a beautiful woman upon whom nature has been prodigal of charms, and who, disdaining the aids of apparel, in the seducing simplicity of her native beauty commands admiration. These great natural advantages call for rulers of especial ability and wisdom, who will make her above all rivalry. And it calls upon every land owner to take care that all necessary drainings, both for health and improvement of agriculture, fences and hedges to defend the crops from animals; public and private roads and paths in all convenient directions, in perfect order for every intercommunication; as many trees in perfect order as are necessary to shelter crops from severe winds, for embellishment or other useful end; the removal of every dead or dying tree, or such as are not in proper place; care and taste in building country houses in place of many uncomfortable and disgraceful ones now standing; paint all with oil paint or with mineral tar, and borrow from the Dutch their system of dwellings—neat inside and out—their villages so coquettishly made up and preserved. The country dwelling ought to be situated as to command the utmost view of the whole plantation; from hence as with a painter's eye, mark where each plant and shade stands.

I add, that gentlemen who have passed through the southern portion of France, from west to east, are agreed in testimony as to its unequalled beauty. The country, gentle in risings—varied with moderate extent of level lands—road perfectly safe for horse and carriage; cultivated fields everywhere; fruit trees hanging their boughs full of fruit, over the road sides; abundant, cheerful population; perfect regard for the rights of the owners of the fruit; men, women and children polite, cheerful, ready with bouquets of rich flowers, or baskets of fruit, every short distance, thankful for a few sous in exchange for fruits or flowers in most liberal quantities. This scene, which extends through several hundred miles, is no where else to be seen on this earth. Certain it is, notwithstanding the fine painting of the self-loving French writer, that France has long since established a character more attractive to others than any other country, in taste, in science, in amount of accumulation. Surely Paris is so far without a rival, even in her double-sized neighbor London. Lord Macartney's Secretary, when descending the rivers and canals from Pekin to Canton, met in the heart of the empire a little talkative mandarin, who had orders to see him through his district, astounded Staunton by telling him that however great and respectable England was, yet it was entirely well known in China that France was the centre of arts and sciences, looked up to as such by the world out of China. Staunton's amazement grew out of his lack of knowledge of the educational system of China and the East, a system which enables the Emperor to select for every office, men who have gained the utmost amount of knowledge. Quite otherwise in some civilized countries, in small states of which may be 50,000 or 100,000 persons who know not how to read or write!! All persons above five years old in China, Birman, Hindostan, Persia, Arabia and among the Mahometans of Africa, read and write. A half-naked fisherman on the coast of Hindostan writes beautifully. So do all the Mahometans wherever found in the heart of Africa.

AGRICULTURAL COLLEGES.

From the 5th volume of the new series of the very valuable periodical of the Sociedade Auxiliadora da Industria Nacional of Rio de Janeiro, No. 1, June, 1850, presented to the Institute (with others) by Mr. L. H. F. de Aguiar, Consul of Brazil, I translate the following:

Project of an Agricultural School offered by Pedro de Alcantara Lisboa, a Member of the Society.

Article 1.—There shall be established in our municipality a School of Agriculture, which shall be followed by others in the capitals of the provinces, as soon as the first shall by experience prove to be advantageous.

Article 2.—In this school a regular course of agricultural science shall be followed, as well practical as theoretical. The scholars admitted to the practical and theoretical course shall be such as are destined to superintend rural establishments. Those admitted to the practical course are destined to serve as subordinates to the first class.

Article 3.—By creating such bodies of theoretical and practical men, the Government will form the means of properly employing capital in agriculture.

Article 4.—The merely practical scholars shall be taught the national language, arithmetic, religion, and go through a course of practical agriculture.

Article 5.—The course of the school shall occupy five years, in the following order:

First year.

1. General botany and its use.
2. General zoology.
3. General physics and chemistry.

Second year.

1. Zoology and its uses.
2. Physics and chemistry applied to agriculture.
3. General mechanics.

Third year.

1. Land surveying and rural architecture.
2. Mechanics as applied to machinery and hydraulics.

Fourth year.

1. Agronomia, or laws of agriculture.
2. The veterinary art.
3. Horticulture and arboriculture.

Fifth year.

1. Repetition of the veterinary art.
2. do agronomia.
3. Experimental operations, in which all the knowledge previously acquired shall be practically applied.

Article 6.—The theoretical study shall be followed by practice, so that each scholar shall be bound to prove the theory by facts on the spot.

Article 7.—Admission of a scholar at sixteen years of age, with proof of good conduct, knowledge of the French and English, geography, and the first mathematical year, comprehending algebra to equations of the second degree, inclusive.

Article 8.—A model room, open to strangers as well as natives, professional men, &c.

Article 9.—In these establishments no slaves shall be admitted to employ.

Article 10.—Those scholars who complete the whole course of study shall be entitled to the degree of Bachelors of Arts, with all the honors attached thereto, with the right to compete for the chairs of the professorships of the school, and of any others which may be created.

Article 11.—Those who work six years in the machine and model rooms shall, on proof of good conduct and deportment, receive small farms, which they shall be bound to cultivate.

Dr. —— observed that, with regard to lime being termed alkaline earth, there are quite a number of them, such as magnesia, strontia, &c.

The Chairman thought that the Brazilian idea of a first and second rank of schools would never answer here, where perfect equality is demanded among men. Our form of Government forbids all inequality. We must therefore provide our instructing process with this fact before our eyes.

Mr. George Dickey observed that we ought to collect from all quarters every information on this subject, and then diffuse it as much as possible among our fellow-citizens.

The Chairman adverted to the commission on the subject of agricultural colleges some time ago by our State Legislature, and to the circumstance of the decision of the American Institute, then to await the action of the State thereon. Now, he said, we should resume the subject. It was one of too much importance to be allowed much longer to lie on the table He wished the recent movement in reference to it by President Tallmadge to go on as soon as the President can be heard; and he hoped for contribution from all those good and intelligent citizens, all of whom concur in the wisdom and propriety of giving the utmost energy to the instruction in agriculture universally. The Farmers' Clubs of England are commonly attended by some able agricultural chemist or professor, who, together with enlightened farmers, make up the very instructive conversations of the Clubs. We all know that Germany has done well with her school, and her rearing of herds of the best sheep, especially. By close and persevering attention, she has obtained some of the most precious fleeces in the world.

Mr. Meigs.—As Professor Mapes proposed the subject of phosphate of lime and draining, and President Tallmadge that of the best mode of teaching agriculture, and as both of them are absent, I move that those be the subjects for the next meeting. Adopted.

Seeds of the Alfalfa, (*medicago sativa,*) Lucerne, from Valparaiso, were now distributed.

We are indebted to the kind attention of Commander James Glynn, U. S. N., for a cask of the seed above named, brought by him from Valparaiso. It is grown along the Pacific coast of South America from Panama nearly to Cape Horn, and there forms the principal article of fodder, and is particularly adapted to horse feed. It is cut all through the year in Peru and Chili, and brought to market green on the back of animals, where it is sold to the livery stables. It is said to prefer a very moist soil, and during the dry season is irrigated abundantly. The stalk attains the size of a goose quill, and grows from seven to eight feet in height. It is considered extremely nutritious.

The Club adjourned to Tuesday, the 3d of June, at 12 o'clock, M.

H. MEIGS, *Secretary.*

AMERICAN INSTITUTE,
Farmers' Club, June 3rd., 1851.

Judge Van Wyck in the Chair. Henry Meigs, Secretary.

The Secretary read the following papers prepared by him for the Club:

[Revue Horticole, Paris, 1851. Translations.]

ON THE PRESERVATION OF FRUIT.

A novel but judicious mode of preserving grapes is given by M. A. Du Breuil, Professor of Arboriculture and Horticulture. Cover the table in the fruit-room with fine dry moss. On this lay the bunches which have been carefully picked, cleaned of all bad berries; wipe the sound ones very carefully with a delicate piece of flannel. Leave the bunches on the moss three days, each bunch separated from the others an inch or two. For want of moss, cotton will answer. This prevents the grapes from being injured by the pressure of their own weight. Prepare hoops of proper strength some three feet in diameter, with proper strings to suspend them, and the grapes to be attached to the hoops. Take iron wire stout enough when made into an S shaped hook to suspend one bunch. Now, fix one of these hooks in the bottom end of the bunch and hang it on the hoop. This position causes every berry to *hang away from its neighbor.*

This position is found to give the most perfect chance for preservation to each individual berry. One hoop full of grapes may be hung over another; or we can use square frames with slats across, far enough apart, and hang the bunches on these slats. When they have hung some eight days, they will be free from moisture, if the weather is not too damp. When they are dry, close up the fruit-room *hermetically* if you can. Examine the grapes every eight days and remove all bad ones. A moderate amount of chloride of lime very dry, as it melts by taking up the moisture of the fruit-room. About thirty pounds weight of it will answer for the fruit-room I have described—that is, about fifteen feet long, twelve feet wide, and ten feet high. All other fruits may be preserved in this room as well as grapes. The grapes intended for preservation must be gathered when fully ripe.

It is unnecessary to say that the fruit-room has double walls, thick roof, and that frost must not get inside of it.

It seems to us that the idea of M. Breuil is capable of being profitably executed near our city and others, where purchasers can always be found for large amounts of perfect fruit. That bunches—say the Isabella and Catawba—would find abundance of admirers from Christmas to May day.

[Translation.]

THE FUCHSIA.

On the 2d of January, 1819, we gave Porchier's interesting account of the origin and culture of this beautiful class of flowers. The account is published in the volume of the transactions of the Institute for the year 1848. Father Plumier, a religious minim, discovered it in America about the end of the 17th century—about 160 years ago and named it after a distinguished botanist by the name of Fuchs, who gave some account of this flower in his botanic work, published in 1803, entitled Nova plantarum Americanarum Genera. By hybridization, seedlings, &c., there have been produced five hundred and forty-one varieties, all accurately described—as late as September, 1848, page 348. The Revue Horticole of 1851, contains a description of ninety-one distinct new varieties produced since by the gardeners of France, Belgium and England chiefly. Among these there are many of distinguished beauty, and, indeed, very few would be omitted by persons having the means to obtain them. The general rule to be observed in their cultivation is abundant watering, half-shade and plenty of rich food, (soil and manure.) These new Fuchsias are marked by great difference of form as well as color, but in all of them the colors are rich. They are all distinguished by name: The Compact, Conciliation, Perfect Crimson, Criterion, Diana, Doctor Gross, Don Giovanni, Doctor Smith, Elegantissima, Elizabeth, Eliza, Emma, Enchantress, Ferdinand, Gabrielle d'Estrees, Gazelle, Giant of Thielt, Jenny Lind—of a tender rose Vermillion, strong tube, segments very wide and short, ample corolla of purple vermillion, a very fine variety! The Fine Boy, The Commander, The President, Lord Nelson, Minerva Superba, Moliere, Mont Blanc—this flower is pure white with a corolla of rose amaranth—Oberon, Pearl of the West, Pearl of England, Orion, Perfection, Prince Albert, Reverend William Freeman, Rosalie, Tom Pouce, (Tom Thumb,) Unique, Voltaire.

We suppose that these Fuchsias may be obtained readily from Mons. F. Porchier, President of the Horticultural Society of Orleans, in France, who gives the preceding list of new varieties. He says there are some others (mentioned in English, Belgian and French catalogues,) which he has not seen, and which he believes to be excellent—such as the Crimson King, by Mayle, The Emperor, by Kendall, The Paul and Virginia, by Dubus, Queen of May, by Smith, Queen of the Fairies, by Hochen, The Sir John Falstaff, by the same, The Acteon, by Gregory, The Fiery, by Veitch, The Kossuth, by Smith.

[Annales de la Societe Centrale d'Horticulture, Paris. 1850.—Translations.]

LE HANNETON.—THE MAY BUG.

Bosc says there are more than one hundred and fifty species. Four years ago a gardener at Meux showed me three live ones, each of which vomited a white worm. I carried these to the Agricultural Society. The members had never seen anything like this. All these bugs, says Bosc, live on the roots of plants, in the larva state, and at the expense of the leaves when in the perfect state. The common May bug is of the color of rust, with a black and hairy or velvety corslet; it has a white triangular spot on each side of the rings of the abdomen. The female digs a hole in the earth in which she deposits her eggs. These eggs produce larva, known to cultivators by the names of white worm, man, or Turk, &c. These larvæ lie in the earth four years, and then are changed to nymphæ. The May bug lives only seven or eight days. After coupling the male dies, and after depositing her eggs the female dies also.

SMITH PARSLEY.

In Autumn, 1849, I visited the superb vegetable garden of Fachette, near Windsor, established some seven years ago by Queen Victoria, on the model of that of Versailles—containing about seventy acres. I admired the rich and singualr appearance of an umbelliferous plant forming very thickly tufted borders of the beds. This was the frizled parsley of Smith. I asked the gardener, Mr. Ingramm, about it, and he said no other person than they had it. I am convinced that this root will soon take the place of all others.

[Annales de la Societe Centrale, Paris, 1851. Translation.]

DRAIN TILE MACHINE, BY THACKERAY.

The various modes of draining wet lands by the use of brush, stones, &c., have all given way in favor of the regular tile, on account of their superiority and economy. The incessant repairs demanded by the other systems vanish in the use of tiles, at suitable depths. The machine, of which we give a drawing, obtained for Mr. Thackeray a silver medal, at the national exhibition of 1849, because it united all the conditions required in a tile making machine. The moulding of the tiles is a continuous operation, and sections of some fifteen inches in length are cut off. The clay is tempered, all stones taken out, and a boy places some of it on an endless band, supported by suitable rollers. The clay then passes between two cylinders into a cavity, where, by the constant addition of the clay, it becomes compressed, and is then forced to pass through a mould of the required diameter of the tile In the drawing you see there are two tiles coming through two moulds at the same time; these tiles, you see, are received on bands of gutta percha or India rubber, running on polished wooden rollers as fast as they come out to the desired length, a wire of iron, stretched in a frame across the machine, cuts off the tiles, first by descending, then up in ascending. The cuts are very neatly done. This cutting wire can be adjusted to cut any desired length of tile. From the experiments made with it by order of the Minister of Agriculture and Commerce, it is concluded that his machine, operated by two workmen and two apprentices, relieving one another, can make in a day fifteen hundred metres, (about 1,875 yards,)—over a mile per day—the clay being first prepared. The tiles, about one foot long each, can be afforded for from four to five dollars a thousand, according to the cost of burning and wages of workmen.

The principal advantages of this machine are that it does not tear and make holes in the tiles, as piston machines have done.

DIGNITY OF LABOR.

Secretary—I extract the following excellent observations from Commissioner Ewbank, and desire such sentiments to be spread through our Republic:

"It is a singular vagary that men to whose genius and industry the world is indebted for what is *most valuable in it*, should have always been held in low esteem. A habit of modern, it was a passion in former times to look askant at those who *use the hammer and the spade*, under the fond delusion that the less wise men have to do with gross matter the nearer they resemble the Great Spirit; whereas God is the greatest of workers—the chief of artificers!

"So far from locking up his wisdom in abstractions, he is incessantly embodying it in tangible things; and in them it is that intelligence, ingenuity, and resource are made manifest. What is this world but one of his workshops, and the universe but a collection of his inventions? In him the squeamishness of half-formed philosophers and of high-bred fashionables respecting manual and mechanical pursuits finds no sympathy, but *terrible rebuke.* His works proclaim his preference for the material and useful to the merely imaginative; and in truth it is in such that the truly beautiful or sublime is to be found. A steamer is a mightier epic than the "Illiad;" and Whittemore, Jacquard, and Blanchard might laugh even Virgil and Milton and Tasso to scorn.

"There is, moreover, a morality belonging to the arts that as yet has been little heeded; a lever, hammer, pulley, wedge and screw are actual representations of great natural truths; and the men who revealed them may be said to have been inspired. The Divine afflatus flows through many channels. In fact, all truths are allied—the decalogue being an exponent of *moral*, as are mechanical inventions of *physical*, and axioms in science of philosophical verities; hence, whatever science discovers and art applies is Divine, and ultimately tends to eradicate evil; indeed, *all teachings* begin with the arts, and nothing is more certain than that all must end with them. If we glance at existing nations, we invariably find those that excel in arts and sciences most deeply imbued with moral principles—the foremost and most active in the benevolent enterprizes of the age. Inventors, then, are revealers and expounders of the practical doctrines of civilization, and more than any other class have shown us how to lessen life's evils and multiply its good.

"It has been regretted also, as an evil of magnitude, that while the arts administer to the necessities of the species, a general knowledge of them has not been demanded as a feature of popular education; that while the works of historians, poets and theorists have been adopted as models by which to form the taste and excite the ambition of youth, the great doctrines of life, as exemplified in the processes by which the products of this planet, its forces, and the properties of its substances are crowded into the elements and accessories of material, and, consequently, of mental refinement, have been neglected. Such are the errors of the past; but there are now, however, indubitable proofs of the movements of civilization onward and upward."

Mr. Carter, of Brooklyn.—The cheapest plan for bringing water under ground considerable distances is by using *water cement*. Make a ditch a foot deep and wide enough for a man to work in it; then make another, only four or five inches wide and six deep; put into the latter some prepared cement, place on it a pole as large as the tube you desire, put cement on top of that, work the cement and twist the pole until you have made it right, then draw out the pole. Before the cement sets, take a fork and prick holes enough in your cement pipe to let water in; as soon as the pipe is set, cover up. This operation will not cost more than two cents a foot. Hollow bricks have been made with advantage for buildings, they keeping always dry, and can be used for draining.

Dr. Antisell.—Will not long cement drains, such as you describe, be liable to break from contraction, upheaval of ground, &c.? Would it not be best to make it in short sections?

Mr. Carter.—It should be laid below frost.

General Chandler.—I take occasion and deem it proper to state, for the information of all whom it may concern, that a company is organized on Staten Island for making drain tiles. The agent of the Company, Mr. Dunning, has an office at No. 1 Bond-street, in this city. The tiles they make are about one foot long and the cost about one cent each.

Mr. Carter.—Did not like the *sole tile* as well as that of an oval form. If I used the sole tile I should set it *side uppermost*.

Dr. Antisell.—On heavy lands, where the quantity of water is large, the flat solid tiles appear to act efficaciously, because they have a greater purchase on the ground and are not, therefore, liable to shift; for the mere flow of water in drains of large dimensions, the form is not so material, but in small ones it is. The London sewers are of oval form.

Chairman.—Professor Mapes makes some of his drains five feet deep, while the smaller ones leading to those deep ones are less, and the deep ones are cheaper.

Dr. Antisell.—In any drain the surface water moves slower than that on the bottom. In one of oval form the more rapid current will cause the water to sweep the bottom so as to prevent sediment.

Chairman.—Our great point is to drain cheaply. Cotgreave's plough plane, noticed lately by the Club, gives promise of a facility and cheapness, which gives vast impulse to this valuable part of agriculture—good for most lands, while it is indispensible for wet lands, rendering the soil loose, friable, readily penetrated by air and moisture.

Mr. Meigs.—The drainage of nature by rivers and rivulets is the great model for the farmer. A country thoroughly drained this way, leaving no swamps, is the loveliest place in the world for health and farming. Our artificial draining should be so managed as to accomplish these points on every farm, for the farmer who allows stagnant water or soaked lands about him, will soon see the results in the *grave yard*, and debility in the survivors of his family. We all know the terrible destruction of health and life in the early settlement of our country. Health visits the well drained lands, while the destroyer dwells near swamp, and fen, and drowned lands! I have felt it to my sorrow!

Dr. Antisell observed that similar diseases are found in London in those spots of a like character as to moisture.

Chairman.—Not only is this true as to men, but as to animals; the same causes often destroy stock—cattle and sheep.

Dr. Antisell wished to be understood distinctly as by no means recommending the expense of draining in porous light soils.

Mr. Carter remarked that it is very plain that we should put our drains below the reach of frost or the plough, but never below clay or any hard pan through which water cannot percolate. The natural result of clearing up land in Indiana and Illinois has been, in even so short a period as five years, to drive away fevers and agues. I have seen the change in that brief period. Much of our country was formerly sickly.

Dr. —— observed that besides the evils of a new country in fevers and agues, something may be said of the wretched dwellings of settlers, themselves causes of disease.

Mr. Carter.—One of my farms in Jersey is so wet, cold and sour that it will be worthless until drained.

Professor Mapes having proposed phosphate of lime and draining and President Tallmadge the best way to teach agriculture, and they not being present, the Club adopted these subjects for the next meeting.

Adjourned to next Tuesday at noon.

H. MEIGS, *Secretary.*

AMERICAN INSTITUTE,
Farmers' Club, June 10th, 1851.

Judge Van Wyck in the chair, Henry Meigs, Secretary.

Prof. J. J. Mapes, of New-Jersey, presented several kinds of strawberries from his farm—Hovey's seedling, the largest, measuring four and a half inches in circumference. Another, name unknown, a great bearer, pale flesh color, oblate form, one stem—had eighteen berries and buds on it.

Mr. Meigs said that, some thirty years ago, he had the Chili strawberry, which he preferred, for its sweet mild taste, and great bearing, to any other strawberry. It seems to me that this from the Professor's farm is the same species.

Prof. Mapes.—Here is a quite long berry of a deep red and rich aroma; that is growing on the spot where I had established some wild ones of much smaller berries. I cannot say whether the specimens here are from that wild stock, but I believe it. The aroma is more rich and powerful than any of our best cultivated berries. Another sort I believe to be a hybrid. Strawberries have their rich taste and aroma all in the exterior layer or coat, which is easily peeled off, leaving the core containing only some acid. I had observed the tendency of soil in which much tannin existed, from old bark of trees, to give heavy crops of strawberries, and I have tried it by putting a gallon of tan liquor into two hundred gallons of water and sprinkling some strawberry beds with it. The difference is remarkable. Those to which the tannic acid had been applied were more regular in figure, and of larger size and better quality than the others not treated in the same manner. I have applied to some beds spent tan, previously decomposed by chloride of lime and carbonate of soda, (salt and lime mixture,) and with marked benefit.

Undecomposed spent tan is often applied to strawberry beds, and is very beneficial as a *mulch;* straw is often applied in the same way, answering the double purpose of a *mulch* and a coating to protect the fruit from contact with the sand.

Secretary.—Will Prof Mapes explain what is meant by the word *mulch?*

Prof. Mapes.—This term is applied to the covering of the ground with some substance which will not prevent the entrance of air and moisture into the soil, but will prevent the too direct action of the sun on the surface soil. It was first brought into general use in England, by a Mr. Gurney, and hence the name Gurneyism, so often applied to this practice. As a confined space of air is the best non-conductor of heat, a slight *mulch* causes a portion of air at least to remain in a state of rest, and therefore the soil is protected from sudden differences of temperature and the effects of the noonday's sun, and the chilling cold of night are rendered less dissimilar.

Mulch is used by pear-growers in mid-summer, to prevent the moisture received by the tree from being too hot, and thus causing blight. It also prevents the loss by day of the ammonia received from dews at night, and in winter prevents the early rains from being frozen in the immediate surface of the soil, and debarring the easy ingress of water and atmosphere.

Soils mulched are more fertile, and if a board or plank lie loosely on sward all winter and be removed in the spring, the summer's growth of grass will show the form of the board.

Some strawberry growers place slabs with the round side up on the ground, cutting notches in the edges of the slabs at a distance of a foot apart, for the plants to grow through. This prevents the growth of all weeds, and keeps the ground fully covered. In localities where salt meadow and other coarse grasses are plenty, many fields are mulched, and the only objection ever urged to this practice is the harboring of mice during winter.

Strawberries can doubtless be enlarged beyond what they now are, and a new kind is now being raised in France called the *Pelé Melleville*, which measures six inches in circumferance. The Black Prince is one of the best strawberries, but is a shy bearer. The British Queen and Prince Albert are good when cultivated properly. Wild strawberries are always said to have the richest flavor. Not so when the tannic acid is used on thegarden strawberries. The Prolific Hautboy has a high and peculiar aroma and flavor. Tannic acid aids that too.

Chairman—As the subject of teaching agriculture is for this day, we should like to hear gentlemen upon it. President Tallmadge is not here—will Professor Mapes give some of his ideas upon the matter ?

Prof. Mapes—I think we are doing harm by attempting an Agricultural College *now*. If a Normal School was established to make teachers of agriculture it might do, but I believe that if the Legislature of New-York should appoint a sufficient number of competent teachers to visit farmers and talk with them on their farms in a plain way good would rapidly flow from it. I have just returned from a visit to Boston where I was invited to address a meeting of the Legislature. Their bill for a College had been lost, but the Governor assured me that the real mind of the majority was for it. Any great expense in relation to a College would be a death blow to it. Fourteen Agricultural Societies of Massachusetts sent representatives to a meeting which advised a College. They agreed upon it as we should if such a meeting was held here. We may be able to employ one teacher first, and then another, until there are enough to teach all—it would soon make farmers at work without teachers. Take such men as Bement, Ambrose Stevens for cattle, &c., A. Brill for root crops, Norton for agricultural science generally.

Lectures should be delivered in every town and district by competent persons who were scientific and of course practical.

Mr. George Dickey—Would it not be well to get up suitable petitions now, addressed to the present Legislature in relation to this important question?

Professor Mapes—I have delivered about one hundred and fifty agricultural lectures, and some of my hearers have become rabid. A sort of furor on the subject of agricultural improvement has seized them. Dr. J. Marshall Paul went to look at a tract of four thousand acres of poor land on sale at about *five dollars an acre.* He bought four hundred acres at that price. He has underdrained two hundred of them and they are now worth *one hundred and fifty dollars an acre.*

Mr. Meigs—As to drains, I notice an advertisement in the *London Times* of 27th of May last, of an exhibition of a machine laying drain pipes at once without trouble. Place of exhibition three miles from the Crystal Palace.

Professor Mapes—There is a plan now in operation (as I understand,) by which it can be done at one operation, five feet deep, and with economy. As to drain tiles we can now have them from a manufactory on Staten Island, by application to George H. Barr, at No. 25 Cliff street. The tiles of two inches bore are sold for nine dollars a thousand, those of larger calibre for more.

Dr. Antisell—I find that the phosphorite or apatite contains ninety-two per cent. of phosphate of lime. I have since that seen the Apatite from Crown Point described by Professor Emmons. It is surrounded by serpentine which, ground with it colors it, and it is of less value. The pure Apatite is white. The mass in Jersey is equal to the example which has been exhibited here; it is contained, in mine, in a gangue of feldspar.

Prof. Mapes—The Crown Point article is said to have sulphate of iron mixed with it. Doctor Jackson, of Boston, says that he can partially purify it by removing that sulphate. Alger, of Boston, is said to have bought that mine. Dr. Jackson says they produce from it the super phosphate of lime, which is better than the phosphate. I apply it, and find much better effects than guano and charcoal. Ohio wheat crop has already fallen from thirty-five bushels per acre to fifteen, and that of New-York from thirty bushels to twelve per acre. Only add the super phosphate, &c., and the crop will be restored. Now, what an amount of these are carried off from Ohio in wheat, bone, potash, &c. It may become difficult to obtain an adequate supply of the phosphate hereafter. If the bone used for manure is about three-fifths dissolved it becomes honey-combed and the roots of plants readily penetrate it and tear it to pieces. What special manure I use, I buy here.

Dr. Antisell—Many of Western New-York farmers say they prefer *leached ashes!* to it as manure.

Prof. Mapes—Yet notwithstanding that error they have what they don't understand; they have the soluble silicates in them and therefore furnish the coat of grain stems, so that the farmer who puts leached ashes on his oat fields has oats that won't lodge, although he knows not why. We see thrown away here thousands of tons of sulphate of potash. Why, I have known a gutter carefully made to get rid of precious liquid manure into the North River. Let a lecturer on scientific agriculture beware. He will be told that he is crazing the heads of young men. The old violent prejudices are alive yet! At Princeton, in New-Jersey, the door of the lecture room (on Agriculture) is thown open, but no farmers enter it. If a lecturer use such words as oxygen and hydrogen he might as well cut his own throat. If he would succeed in gaining the ear and the belief of these men he must get at them gently. The late Judge Buell combined knowledge and method in giving it out, and he thus was enabled to render that vast benefit to the cause which he did.

Guano is good on the Virginia lands generally, but to put it on and plough it into soils deficient in organic materials, is a perfect waste. Many European cities now save their sewerage matter, which is properly thrown over peat, muck and like matter I notice a great waste in the rear of our city hall, for there all the efforts of such a multitude of patriotic individuals are allowed to be utterly wasted. There are but a few farms on which water cannot be raised by the water ram for irrigation and for diluting manure. A tube of cement can be made cheaply, capable of conveying the water from the springs up hill. The meadow flats in my own vincinity are in depth from one foot to sixteen feet of organic matter. Boats might be employed to receive the matter at the mouths of the sewers.

Dr. Antisell. It is easy to collect the materials of many sewers. Allow them to settle, then pump off surplus water, and convey the residue to farms. I proposed this plan to the authorities of Dublin, and private parties use it to some extent. In the city of Antwerp they estimate the value of each man at two shillings and nine pence a year, and the expense of the city government are about paid by it. The gas companies here and in some other cities throw away great value in ammonia. We thus throw away and then have to buy it.

Prof. Mapes. The companies can save the ammonia if they please. Some persons think it is the production of the gas which causes so great a cost; but it is the serving the gas out to the customers which is so expensive.

In my mode of farming I find difficulty in procuring a man to do as I want him to do. I make them plough in the manure the same day it is put on the land. I would discharge a man who would leave it exposed one day. When it is left on the ground for any length of time all the good you get of it is a *mulch only*.

Mr. Meigs. John Taylor of Carolina, a Senator of the United States and a Governor of Virginia, published a small essay of distinguished excellence, under the title of *Arator*, (the ploughman,) in which he taught the inestimable value of *inclosing*, as he calls it, all the organic manures, immediately. Every cabbage stump, waste leaves, straw, wood, bush, stalk, every vegetable and animal matter, ploughed in quick. He commenced on a large field burned up by tobacco—a sterile waste. In a few years he made it give the largest crops of wheat ever yielded by the richest lands in Virginia.

Mr. George Dickey, proposed for the next meeting the subject of "*Summer management of Fruit.*"—*Adopted.*

Professor Mapes then distributed his strawberries among the members of the Club.

The circulars of cattle sale of Lewis G. Morris, on 24th of June, were then distributed.

Adjourned to the regular day, the third Tuesday of June.

H. MEIGS, *Secretary.*

AMERICAN INSTITUTE,
Farmers' Club, June 17th, 1851.

Austin Church, M. D., in the chair. Henry Meigs, Secretary.

Mr. Geo. S. Riggs, of Baltimore, a member of the Institute, said: Mr. Chairman—In company with Gen. Chandler and Judge Meigs, I had the pleasure of visiting, on Thursday last, our worthy Vice President's (Mr. Pell) farm—the best cultivated, most beautiful and enchantingly picturesque place my eye ever rested upon. I will merely mention a few of many wonderful productions that came under my especial notice. Mr. Cunningham, his intelligent gardener, showed me a basket of Hovey seedling strawberries that he had picked to present to a neighbor. Thirty-nine were laid on a flat surface and covered a space of nine inches by eleven, that is one to every two and a half inches. I saw one weighed, and found it two ounces, and eight and three-eighth inches in circumference. I say, without fear of contradiction, that this is the largest and heaviest Hovey seedling strawberry ever grown.

A pie plant leaf measured thirty-one and a half inches by twenty-six and a half inches in diameter; the stalk four and a half inches in circumference, and the whole diameter of the plant sixty-eight inches, and that, too, in one year. The Calafornia potatoe presented to Mr. Pell, by this Institute and planted in twenty-seven hills—one of which, the first (hill) I came to—was forty-five inches in diameter. This Mr. Chairman, is great growth, when we consider it was only a month since it left this city. His garden is exceedingly rich, weedless, and as light as scientific culture can make it. Of his apple trees it is useless to speak, as their fruit has a world-wide reputation. His orchard contains 21,000 trees, young, healthy and vigorous.

With the useful Mr. Pell combines the ornamental. His fish ponds are eight in number, of spring water and encircled by flowers and willows, and contain forty-two different varieties of fish. The sturgeon is there! the rarest fish of Europe are! and there is to be found fresh shad every day in the year! Who, Mr. Chairman, ever heard, before Mr. Pell tried the experiment, of a pond one hundred and fifty feet above a river, of spring water, containing shad? History tells us that the Aztec monarchs daily ate in the city of Mexico fish caught in the Gulf and brought thence by swift runners, a distance of some two hundred miles. Here fish of the most choice kinds can be, at a moment's notice, placed upon the table. His crops are cultivated upon the widest and most approved scale. If all farmers would throw away principles long since known, by intelligent men, to be false, and read, think and reflect, what would this country become? Why, sir, its fondest lover, its most romantic dreamer, could not "look into the womb of time" and picture to himself the beauty of the scene! The plants of the tropics would be ate upon the mountain's top; fleets of vessels would bear abroad the rich products of America; and but let science be the handmaid of the tillers of our soil, and the inhabitants of now almost unknown countries would ask, like the Peri at the gate, to be admitted into our heaven. Will we slumber on? must we be content with the crops now grown? must foreign countries find a market on soil that nature made with no sparing hand? No! no! 'twill not be so! Our farmers are shaking off their lethargy, and America is just rising, soon to look down upon countries of an older birth.

Gen. Chandler—I did not intend, upon this occasion, to make any allusion to my recent very pleasant visit to the farm of our friend Mr. Pell. Under the circumstances, however, I feel called upon to say that I there saw much to admire, much really to astonish me, of which I may avail myself on some other occasion to speak more at large. Mr. Pell merits the highest commendation not only for the beautiful and scientific cultivation which his farm manifestly presents, but as the pioneer in a system of cultivation, which really opens new views in regard to agriculture, and renders that pursuit additionally inviting and attractive, from considerations which heretofore have not been found in the estimate. The received opinion is, "that a man with a *good* farm, well stocked, may, with industry and frugality, be somewhat independent." But this is not all, for in my opinion, by uniting scientific knowledge to diligent supervision, a man with tolerable judgment cannot make a more profitable or safe investment than in the soil. It is different, however, from every other investment, for the first annual return being no more than the sixteenth of one per cent., should produce no discouragement. Your annual income may be carried from this small beginning to 10, 15, or 20 per cent., depending entirely upon your own perseverance and intelligence. I will conclude by saying that Mr. Pell carries forward one principle, which no one should forget or neglect—he pertinaciously returns to the soil annually all that he takes from it. I do not mean in dollars and cents, for a tithe of the money value of his crop will return to the soil all it requires. Neglect this, and your fields will very soon yield you only a tithe of what they ought to do.

The Secretary—has never seen any farm where so much of the true farmer is manifested by the work. It is a principality—of which the soul is the master, R. L. Pell. At the very prime of life, with a wife and children, all in perfect health, he is in the midst of every luxury as temperate as a hermit. Looking at the farm in all its details from dawn of morning to sunset, every day, using with judgment all the modern means discovered by science, managing the finances so as to be just and properly liberal, but with perfect control of every dollar, he presents to his fellow man an eminent example of that prosperity which health, wealth and sound morality can give. And a rare example it is, for it is a melancholy truth that too many of our young men, as well as those of the old world, make brief dispatch of the blessings heaped for them by their fond fathers, making quick and fearful dilapidation of wealth, and health and morals too.

What Mr. Riggs has stated of the great strawberry is not to be doubted, and I implicitly believe it.

Professor Mapes—For irrigating purposes, a pump has been invented by Mr. Carr, with which one man can lift (and drive through a gutta percha pipe) water twenty feet high from any spring or other supply—as for instance from a hogshead sunk in the low ground. In such a hogshead put some guano, and then pump and sprinkle over the land.

The idea of restoring to the soil all that grows on it as necessary to retain its fertility, is a mistake. Clover for instance, takes carbon from the atmosphere and solidifies it, takes from the land a portion of its inorganic constituents. So that when we examine by analysis we find what a moderate amount of these go to the plant, while the carbonaceous portion is large. This word is equivalent to the word charcoal. Now this is from burnt or charred vegetable matter, and is as perfectly charred by the natural process of decay or by what Liebig calls *eremacausis slow combustion*. The farmer wants but one name for all this and that should be *carbonaceous matter*—and this constitutes ninety per cent. of all dry vegetable matter.

It is indispensable to return to the land the whole of the inorganic matter carried off, as well as a portion of the organic. The atmosphere is the great laboratory whence vegetation is sustained. Soil should be of a dark color in order to imbibe heat. If land should be covered with white, the crop would be very poor.

Mr. Silliman—I have expended much in the purchase and application of manure on my farm. I have used leached ashes and pure ashes. The former contains some of the valuable inorganic matters.

Chairman—Sulphate of soda, potash, and spent ley are important as fertilizers and nearly equal in value.

Prof. Mapes—Our print works throw away a large amount of the sulphate of soda. It ought to be saved for the soil.

Chairman—Is there any manganese in it?

Prof. Mapes—Not much. Not enough to do any harm. Spent ley contains a great deal of common salt.

Chairman—The regular subject of the day is the management of summer fruit.

The Secretary—said that the most recent doctrine in Europe was that the gathering of fruit was almost as important as the raising it, so great a proportion being ruined by bad handling. That no implement or contrivance was equal to a *careful human hand to pick good fruit.*

Prof. Mapes—We have learned to practise one good thing on our fruit trees, that is to scrape the bark perfectly clean, the old notion that the rough old dead bark was of any advantage to trees is utterly exploded. I have stripped the old bark off my Isabella grapes as often as it appears, even once a week if it appears, it is good for them. Trees which have once been used to have clean bark, give up their old habit of producing bad bark. I brush them all over with a mixture of urine, potash and salt.

Robert Rennie, of Lodi, New Jersey, has the bark of his plum, peach, apple and pear trees scraped, as if polished. His gardener brushed them well with a saturated solution of soda. It does not hurt live plants, does none to the smallest extremities of branches, but cleans all, and they appear as if in a new bark. Rennie's trees gave the best fruit. The cherry tree so treated does not become hide-bound after it. The practice of slicing the bark is a bad one—almost as bad as to slice a man's skin. I use the same solution upon my gooseberry and currant stems, which I keep single instead of letting them bush. I have no mildew on my plants so treated. My neighbors have the mildew on theirs. I have tried it on alternate trees and plants, so as to be able to see the exact worth of it. I put one pound of soda in one gallon of water and let it dissolve to perfect saturation, and I see that some soda is always left undissolved, to assure the saturation. The soda costs three and a half cents a pound—the bleachers' *No.* 1 *soda*, so called. Sulphate of ammonia costs about four cents a pound here.

The Secretary observes in the latest English papers extensive advertisements of special manures for sale to farmers. They looked like advertisements of wholesale druggists.

The Chairman offered the following extract from the Northampton *Gazette*:

STRAWBERRY CULTIVATION.

"Those who know anything about the magnificent strawberries, and the immense quantities of them raised on a bed about thirty feet by forty feet, for several years past, in the garden formerly owned by me, in King-street, may like to know the process by which I cultivate them.

I applied about once a week, for three times, commencing when the green leaves first began to start, and making the last application just before the plants were in full bloom, the following preparation:—Of nitrate of potash, glaubers salts, and sal soda, each one pound; of muriate of ammonia, one quarter of a pound, dissolved in thirty gallons of rain or river water. One-third was applied at a time; and when the weather was dry, I applied clear soft water between times of using the preparation, as the growth of the young leaves is so rapid that, unless well supplied with water, the sun would scorch them. I used a common watering pot, and made the application towards evening. Managed in this way, there is never any necessity of digging over the bed, or setting it out anew. Beds of ten years old are not only as good but better than those of two or three years old. But you must be sure and keep the weeds out."

Professor Mapes.—Something has been said of the extensive adulteration of guano. I have found but little of that. It is not used as much as it ought to be. I have mentioned the liberal course of Mr. Dabney, of Virginia, in the purchase of heavy amounts of it, and loaning it to neighbors. Our sugar house *shum* is a good manure, and the cartage of it costs but little. Any small farmer can do better by composting the special manures than by barn-yard manure only, on account of the saving of labor in cartage, &c. I have some land which I guanoed four years ago, and the good effect has not gone yet. I added to my composts bones dissolved in sulphuric acid.

Apple orchards require lime, for the dry matter of the bark and leaf of the apple tree contains fifteen per cent. of lime. Long growth of apple trees exhausts the lime within their reach, and they must have a new supply. Give it to them properly composted with muck. Use the lime freely whenever there is plenty of organic matter for it to act on.

Judge Van Wyck.—Insects are the greatest evil to our fruits. Cleanliness may do much to prevent it—but yet some plan must be fallen upon which will destroy them. The Aphis, or plant louse, is a wide-spread mischief. I have dusted plants with powdered lime, when the dew was on, with some success. Birds help us greatly—they are known to scrape them off in great numbers with their bills. They pick off the ants which sometimes largely infest fruit trees. I saw a tree hurt by the ants who occupied a hole in it. The birds eat them up, and made their nest in the hole, and that tree again gave good fruit.

Professor Mapes.—Certainly, keep the trees clean if you can. Put six bushels of common salt on an acre and it will destroy the grubs. *Unhealthy trees attract insects! Ninety per cent of them!* I have on my farm, placed in fruit trees, one hundred and fifty boxes for wrens; they are now all occupied by the industrious little insect destroyers, and I suppose if I had five thousand boxes they would all be inhabited by wrens. Harlem oil is good to drive off insects; they hate the smell of it. When we do not manure well enough our cabbages are apt to be club-footed and be full of the aphis. Scotch snuff does good among them. For caterpillars I use a copper tube, in which I put some of the burning fluid—touch the nest when they are in and destroy them. You will always find the family at home at certain times of the day, so that then you may make one swoop! repeat this and you will find the next nest more silky and delicate, and soon they will disappear altogether. The fruit coming of late years to this city is so great, I undertook a comparison between it and the supply of fruit to London. I find that the city of New-York last year, received as much fruit in one day as London did in a week—not equal to our peaches of one day.

Chairman—They cannot so well afford to buy fruit as we can.

Professor Mapes.—The truth is that our people eat too much. Many gormandise on it. We have also many poor peaches brought in. The valuable crops are, for a short time, from an orchard. These are worth two dollars a basket, while the residue are really not worth two shillings—better thrown away than brought here. Peach trees can as well last fifty years as five. They do in India and become hard wood. Shorten the head of the tree, when young, until you have nearly made a walking stick of it. Make its head like a horse chestnut tree, round. I have one that has a fine round head; it is about twenty-five years of age. It had stood where horses bit it freely; it has a round head.

Judge Van Wyck.—There are said to be at the South some peach trees of one hundred years of age.

Professor Mapes.—From the pit. But not one scarcely in a thousand are good for any thing. Harker's seedling is a very remarkable one—one of the best peaches known. This tree has been almost denuded by the multitude of grafts taken from it. The fruit is yellow on one side, the other fine red.

Professor Mapes proposed as the next subject—"Root crops, their culture and uses."

George Dickey.—Add "the best mode of collecting and preserving seeds." Adopted.

The Chairman suggested the propriety of taking into account the age of the tree from which we take grafts or buds.

The Club then adjourned.

H. MEIGS, *Secretary.*

AMERICAN INSTITUTE,
Farmers' Club, July 8th, 1851.

Judge Harris Scoville in the chair. Henry Meigs Secretary.

The secretary read the following papers prepared by him for the use of the club.

Professor Mapes, who proposed the subject of the day, is absent, and his views of it would be especially valuable to the club. The ancient world had no conception of the root crop as realized in modern times. The potato was utterly unknown, and we have no evidence that they ever fully understood the carrot, beet, parsnip, or turnip.. The carrot has only within a very short time become known as equal to oats, measure for measure, for horse feed. The beet has obtained an extraordinary celebrity since the French revolution for its sugar. The turnip was used to some extent by the ancients, who occasionally raised some of the largest dimensions ever known. It is doubtful whether we fully understand now what are the full value of these roots. But there is one aspect in which root crops magnify their importance in a way visible to all men, and that is the enormons amount of matter they provide for us on one acre compared with the trifling amount of food furnished by the seeds of plants. A bushel of wheat, 60 lbs., 30 bushels an acre—1,800 lbs. An acre of turnips, at twenty tons, 40,000 lbs.; carrots, at 500 bushels an acre, 39,000 lbs. The root salsafie, vegetable oyster, is not understood. It is the veriest resemblance in flavor of the oyster that can be imagined. What may not its use be when properly prepared as a substitute for shell fish or flesh, as a food? That salsafie should supply the place of an oyster is not more surprising than that the carrot should be equal to oats. Bread, to an Irishman, or to any other gentleman, is not always better than a fine mealy potato. I find my taste so balanced between them that I cannot decide on giving up either of them for any consideration. Nor is this Irish potato, now the *sine qua non* on every table, whether loaded with fish or flesh, alone a capital article. Let the sweet Carolinas, as the sweet potatoes were formerly called, come in for their share of praise. A preparation of flour, sugar juice, forming a delicious and wholesome pudding, and such puddings, 300 bushels on an acre. Of this delicious root there are varieties of which some are very superior to the rest. Intelligent and careful farmers would never have any but the best, and yet very little talent has ever made its way into the raising of our delicious Carolinas. There is not the shadow of a doubt but the best of the sorts may be greatly improved. We are as certain of this as we are of the positive improvement in all our animal and vegetable food, by dint of science and industry. The ox of England, some 500 years ago, averaged less than 400 lbs. weight. The present race are entirely the result of knowledge and care. The same is true, to a great extent, in poultry, in swine, sheep, &c. The originals of many of our most important plants were, compared with the present, small and of very inferior quality. This truth is easily made manifest now by subjecting any of the animals or vegetables to the deteriorating effects of ignorance and carelessness. We can now as readily brutalize our races of all sorts, as was anciently done, and among savages is now done. The root crops show us the men that make them with stern certainty. The starved, meagre, tough, coarse beet, carrot, turnip, parsnip, tell the story of the wretched soil, the lazy, ignorant, stupid booby who ruins his land, his roots, and his wife, children and self. You may read his whole character in a peck measure of his roots. So of his animals. The regular form, full growth, smooth skin and perfect leaf testifies that the farmer who made it must make other things relatively good.

The lessons of these good farmers, teaching by glorious exemplary evidence, how greatly wisdom is handling the land, causes the triumphant crops to bless the owner and his fellow-citizens, while the other poor creature makes his land like himself, shallow, ragged and patched. These most precious lessons are often preached in vain; and they ought, like our religious doctrines, to be dealt out to us daily and weekly, for they are very hard to attain, although so rich in the possession.

To know all that can be known of the best means of amending, fertilizing soil and keeping it so; to have that soil deeply tilled, perfectly freed from weeds; to care for every plant in the whole field; see that each has his wonted room, depth of tillage, proper depth of planting, full space on all sides, proper time of sowing the seeds as well as the previous care of seeds and preparing them for sowing. What a large amount of care is necessary after all the knowledge has been obtained.

The intelligent lovers of agriculture have recently been looking after new roots to be brought into our service. Many have been named as likely by cultivation to grow, like our potato, from a worthless original to a delicious Farina: even from poisonous originals to wholesome ones. In reference to this point allow me to repeat what I have frequently said before, that in 1795, when I was a member of an University, my father also found me full employment for leisure hours in our little farm. On a fall evening a French physician of some sixty years old walked with us through it; and on taking his seat at the tea table asked my father why he did not have tomatoes on the table. The reply was, "We don't know it! we have none." "Oh, yes,' cried the Doctor, "you have them in your garden, now." "Impossible." "Eh bien! I will show you. Allons!" We followed him into the garden, where, in one corner near the barn, grew a love-apple bush with some ripe ones on it. "Ah ha," says the little Frenchman, "here they are!" He took some down to the tea table, cut them up, put on a little vinegar, salt and black pepper, and we tasted with no small reluctance, and with a decided opinion that it smelt like bed-bugs and had a nauseous taste. He said very solemnly that custom would render it delicious and cultivation improve it; that it was not, like other vegetables and fruits, subject to the acid fermentation, but that it operated on the liver like calomel, but not only without the slightest evil consequences, but most favorably for the general health. There is no doubt of the existence of other plants able to contribute greatly to the pleasure and welfare of man. There is one advantage in root crops over all others, and that is in the event of very severe droughts, when the surface crops are all lost, much of the root crop will be available for us and our cattle. I repeat also what was said in the Parliament of England in 1844, about the value of British agricultural products for that year. That the whole value was three thousand millions of dollars, of which the turnip should be credited, for all its uses for men, cattle, &c., *one half*. Now surely we may claim for the root crop all possible care and respect, when the turnip of one year alone can furnish a United States revenue of fifty millions per annum for thirty years! And when we shall fully cultivate California, our turnip crops will be truly singular for their weight and bulk, for turnips have often attained the size of three feet in circumference, with a weight of twenty pounds each. An acre of California turnips, each one of the size mentioned and growing close together, could yield the weight per acre of about 840,000 pounds, or 420 tons, so that one acre would yield the weight of 467 acres of wheat at 30 bushels the acre. The large figures are, nevertheless, available, to show the monstrous difference in quantity between the surface and the root crops.

Some have said that the large proportion of water in roots diminishes greatly their nutritive quantity, in comparison with grain. Now, it appears that, while in the potato three-fourths of it is water, yet in the best bread of Paris, Dumas found, by analysis, 45 per cent of water, which was deemed to be hardly possible, yet it is now known to be correct. Strong flour having in it the greatest proportion of gluten, absorbs and retains the greatest proportion of water. It is true, on experience, that the weight of bread or of the roots taken into the stomach by men or animals, does not very widely differ in quantity.

[From the Louisville Journal.]

L. Young, Esq., has information of a new sweet potato from Peru (as supposed) altogether different from any other. White as snow inside, dry, mealy, has the saccharine resembling virgin honey, grows to prodigious size, even on the poorest sandy land. The roots remain without change until the following May. Grows equally well from slip or vine. See Commercial Advertiser of July 1, 1851.

H. MEIGS.

ROOTS.

Leibig remarks that—"All substances in solution in a soil are absorbed by the roots of plants exactly as a sponge imbibes a liquid, and all that it contains, *without selection!* The substances thus conveyed to plants are retained in greater or less quantity, or are entirely separated when not suited for assimilation."

Decandolle supposes that the roots of plants imbibe soluble matter of every kind from the soil, and thus necessarily absorb a number of substances which are not adapted to the purpose of nutrition, and must be subsequently expelled by the roots, and returned to the soil as excrements. Now, as excrements cannot be assimilated by the plants which eject them, the more of these matters the soil contains, the more unfertile must it be for the plants of the same species. These excrementitious matters may, however, still be capable of assimilation by other kinds of plants, which would thus remove them from the soil, and render it again fertile for the first. And if the plants last grown also expel substances from their roots which can be appropriated as good by the farmer, they will improve the soil in two ways.

The tobacco administration in France have used chemical analysis as a test of the value of tobacco. They burn a portion, and the relative quantity of potash found in the ashes decides the relative value; the greater the amount of potash, the better the tobacco.

[From the London Farmers' Magazine, June, 1850.]

How far it is possible to recover exhausted lands without manure. By M. M. M.—There is not a better understood fact in agricultural science than this; that if we take off from a soil its fertilizing qualities, and none are returned, it must by and by become barren; and not only is this true in its widest and most extreme sense, but it is also equally true, that the more you take away from a soil the elements of the growth of plants, the greater will be the difficulty of obtaining the crop, and the smaller will be the produce of that crop year after year.

It is true, some soils will bear much more severe cropping than others. Either there has been a greater per centage of the elements calculated to produce crops present in the soil at the commencement, or there has been a much greater depth of soil with the ordinary percentage, which is in fact the same thing; and it only requires the plants to search for the food which they had exhausted above, in order to obtain the quantity necessary to their growth and development.

Thus, in a deep alluvial soil, where the surface only has been scratched for years, and may be for centuries, and where the super soil is thoroughly exhausted of all the elements of crop-growing, while perhaps the sole of the plow has managed to make a firm pan, a few inches below its surface, it is not necessary to manure at all. Only break the pan and plough up the fresh soil, and all turnip disease and clover sickness and root-swelling of oats will be prevented. In fact, the soil below will contain a proportion of the food of plants suited to their wants, and hence on such soils it will not be necessary always to carry back the elements of which it is exhaused, because they are already present, only locked up from the plant, and liberated and brought within its sphere by *the fact alone of deep cultivation.*

But on poorer and thinner soils this process would be unavailing. The subsoil below is poorer than the soil above. To deepen here were only to add to the previous poverty, and hence the cultivator must hit upon some other mode of restoring fertility than mere deep cultivation. Nay, we have seen the more deep ploughing of ordinary land operate against immediate productiveness, and have for the time exactly the opposite tendency.

But there are hundreds of means by which more or less of the missing elements are restored by natural processes alone; and though it may be necessary to modify crops, so as to be assisted by nature, still there are scarcely any of the known elements of plants which are not provided for their use in a greater or less degree in the wild field of nature. If we first take *ammonia*—the symbol and vehicle of the nitrogen of plants—the staple of the wheat plant, and perhaps the real test of the fertility of a soil, other things being equal—of this Liebig is so certain that he not only asserts its presence in the atmosphere, but declares that it exists in all soils in quantities more than sufficient to produce any crop of corn, or grain, or plants whatever. Mulder questions this, it is true. He states that the atmosphere contains an accidental quantity of ammonia, and "that it ought not to take any higher rank, as regards organic manure, than many other substances accidentally mixed in remote quantities with the atmosphere." But then the question naturally enough arises, is not this one of the compounds, which being accidentally mixed with the air of the atmosphere, nature has provided to restore to worn out soils the elements of which cropping has deprived them. Now, whether the amount in the atmosphere be great or small—and it will be doubtless varying as to the dry or wet condition of the atmosphere—there is no doubt but it is there, and from thence is supplied to plants by the soil which has shown such very decided tendencies to absorb it. Now it is not at all material whether it is formed from the nitrogen of the atmosphere, combining with the hydrogen of water, or whether it is derived from the decomposition of nitrogenous substances, so that it really comes there, and that it is also contained in the water of our brooks and rivers, and so in a greater or less degree is applied to plants.

Carbon, again, of which, as we shall show hereafter, so much is abstracted from the soil, is supplied from the atmosphere, where it exists as an integral part of the air we respire, and which our respiration, combustion and decomposition are constantly supplying, and also from the water of our rains and snows, which brings it down with it to the earth. Hydrogen can easily be supplied from the water of springs and from rain as well as from vapor. Then again, even sulphur, which is liberated by combustion as sulphurous acid gas, will be condensed by vapor and descend to the earth, or will escape in the shape of sulphuretted hydrogen from decay of vegetable matter, and will be liberated doubtless by the earthquakes and the volcanic actions of the Mounts Ætna, Vesuvius and Hecla to afford a never failing supply. It will also be carried as dissolved sulphurets in the water of springs.

Chlorine will be supplied by the tempests, which drive the sea spray for miles across the country[*], and which thus afford *a supply of the minerals which may last a generation.* Phosphorus, also, that most necessary of all the elements of plants, will be supplied by the atmosphere by the accidental presence, if it is so pleased to be expressed, of phosphoretted hydrogen; but it is from the decomposition of the rocky particles of the soil that by far the greatest supply of the mineral elements of plants is to be obtained. Thus, if we take the native rocks, even of the *deepest lying character*, the granite, we shall find that it is only necessary to allow these to disintegrate, and we shall have some very important food for plants provided. It contains

---

[*] During the great storm from the south-west in January, 1839, the salt spray from the west coast formed a saline incrustation on the windows at Malton, nearly across the whole island.

Silica,	74.00
Peroxide of iron,	3.00
Alumina, (clay)	12.20
Lime,	0.22
Magnesia,	0.46
Potash and soda,	9.33
Fluoric acid and water,	0.50

Here are at once the very elements of success in plant growing, potash, soda, lime and magnesia, and the first named in as large a proportion as nearly ten per cent.

If again we take the basalt, we have these constituents:

Silica,	53.70
Alumina,	25.41
Lime,	4.55
Magnesia,	1.37
Oxide of iron,	8.95
Sulphuret "	traces.
Water,	4.30

If we take sandstone, again we have,

Silica,	54.34
Peroxide of iron,	3.90
Alumina,	4.35
Carbonate of lime,	30.00
Carbonate magnesia,	2.49
Phosphate of iron,	0.20
Alkalies,	traces.
Water and loss,	4.72

Enough has been said to show that if the decomposition of these rocks could be waited for, there is in them abundance of supply for the wants of plants, and that it only requires judicious cultivation to bring out these so far latent elements, existing truly in the soil, but so locked up as to be immediately unavailable to plants. Now, these will all disintegrate by the action of oxygen, of frost and water, and it is only necessary so to adapt cultivation as to bring them into a state favorable to the reception of the gases of the atmosphere, on the one hand, and the locked up elements of soil on the other. To cultivate such soils so as to foster and bring out the principles of self-supply, to grow such plants as shall take the least of what is so supplied in the smallest degree, is to carry out, as far as possible, the *restoration of exhausted land without manure.*

It is with great pleasure that we take these remarks from a pamphlet, which will never be seen by more than a few dozen men, and diffuse them in our newspapers, for the benefit of tens of thousands of readers.

H. MEIGS, *Secretary.*

[From the London Farmers' Magazine, June, 1851.]

Frauds in Manure.—An "eminent Professor of one of the Universities" recently certified that a preparation of bones and acid contained 43 per cent of soluble phosphoric acid, a quantity *which he must have known was impossible!* An eminent chemist signs his name to any analysis sent to him, provided it be accompanied with a post-office order of *ten shillings and sixpence!* Another gentleman of the same cloth refused to certify that a mixture, 90 per cent of which was soot, was not the best possible manure for all and every crop without a fee of *twenty guineas!* With such doings among *scientific men* it would be surprising if the *practicals* were far behind. Accordingly we find some enterprising individuals, at a little town in Norfolk, grinding tanners' bark and selling it as guano for £6 6s. per ton, (upwards of $31.) In a town in Yorkshire, a large manufactory is now going on preparing a mixture of soot and human excrements, and for which, whilst the intrinsic value may be £1, they have no difficulty in procuring £5 sterling per ton. In a town in Cornwall, a fortunate vagabond managed to dispose of several hundred tons of super-phosphate of lime last season; his only means of preparation being an up-stairs room and an Arnott stove, an arrangement capable of producing about ten or twelve tons (only) in as many months. In fact, there are three towns which have now attained an unenviable notoriety in this respect, viz: Hull, Newcastle and Wolverhampton. In one of these we saw a steam-engine which had been at work several weeks, both night and day, driving a pug mill, mixing Patagonian guano and chalk together; the guano, of even this inferior quality, being in about the same proportion to the chalk as the water was to the brandy in the Dutchman's mixture. And in another of these towns there is now a large manufactory very busy preparing super-phosphate of lime, the result being the dried refuse of a tan yard or glue manufactory, which would be costly at ten shillings and sixpence per ton.

Lecturers are hired who say that their manures have sold for four times as much as the best tea, because they will supersede the use of the manure altogether.

Dr. Peck, of Lakeland, Long Island, presented specimens of rye, of golden Australasian wheat, and eight rowed white flint corn, grown on his farm, at Lakeland, 48 miles from New-York. These samples were deemed to be as good as could be produced by any fertile land whatever. The land producing the wheat was last year cultivated in potatoes, and the year before it was covered with the shrub or bear oak, grown there from time immemorial. The doctor put fifty bushels of shell lime on an acre, costing seven cents a bushel, and nothing else. It is now decided that a beautiful land, condemned by want of knowledge to the singular charity of sterility, is as capable of good crops as any other land, better than the hundreds of thousands of acres burned up by tobacco, cursed by ignorant culture in these United States. An island so level, from a hundred miles south-west to north-east, that it is, *par eminence*, the ground for horse-races. And it is more eminently the ground for intelligent farmers and gardeners, to supply the great city of the west, which can be drawn thence by its railroads, from end to end, *in four hours*.

Marcus L. Ward, one of the managers of the 24th annual fair of the Institute, presented two bottles of Longworth's sparkling Catawba wine of 1848. This wine is prepared by a Frenchman by the name of Fourier. Would that all the Fourier prescriptions were half as good as this. Seventeen members tasted it, and their unanimous opinion was that it was superior to nine-tenths of the wine sold as champagne. Now if our great country will provide such a wine in the quantity of which it is capable, it can feast the human race with potations unequalled except by the *little patch*, (as Webster would call it) champagny. The millions of dollars lost by us in the vain effort to naturalize foreign grapes here are not spent in vain, since it has taught our aspiring countrymen to look for their wine from native sources. A new era in the history of wine has now opened upon us; we can grow Catawba grapes on millions of square miles, but we cannot grow a single European grape! The frauds which make false champagne wine will be unnecessary; our Catawbas will be so abundant that honest men as well as rogues will have good wine.

Prof. Mapes, who proposed the root crop for discussion, being unavoidably absent on business of importance, the club continue that subject to the next meeting.

Root crops, their culture and uses.

The club adjourned.

H. MEIGS, *Secretary*.

AMERICAN INSTITUTE,
Farmers' Club, *July* 15, 1851.

Judge Van Wyck in the Chair, H. Meigs Secretary

The Chairman said that, before entering on the regular subject of the day, he wished to state a few facts as respects the kind of farming which he witnessed lately, on a visit made to an old neighbor and friend of his, in New Jersey. He is a *real working* *farmer*—does much of his work himself—is almost constantly with or near those whom he occasionally employs to assist him—his farm is in excellent order, and ever has been—it lies about four miles southwest of Newark—as fine grain, wheat, rye, Indian corn and grass as I have ever seen growing anywhere—wheat, I should think, would produce from twenty-five to thirty bushels an acre. I speak within bounds—stem healthy, very plump and promising weight, hardly ripe. His rye he was cutting, and no man need swing a cradle through finer—thick and tall on the ground—some of the stems nearly or quite six feet—heads long and well stored with the best berry—this was easily proved by taking a bunch in the hand and feeling its weight. Grass, of the same character, and principally timothy—some of this cut and made, and some standing—a few spears pulled more than five feet in length—heads of some twelve inches long, and which I here exhibit to the club He has fine orchards on his farm, and stands, at Newark, and elsewhere, high for the excellence of his cider in bottles or draught, and always commands the highest price. This season the trees do not look as healthy and promising for fruit as I have seen them—the apples, many of them, are shrivelled and gnarled, plainly showing assaults from that growing evil among us, insects, many leaves of the trees dead and dropping off. I saw indications of aphides, or plant lice, and some other insects; still, there may be a tolerable crop. I brought one with me, and here present it, called the ox apple. When growing, healthy and ripe, it is of the largest class, and fine flavor, good for cooking, fair, smooth, outside. This is one of the largest I could get; its surface, you see, is knotty and rough; and on being cut open, insects were found in it. There is a beautiful vale running through a part of this farm; its sides and bottom are level, ornamented with some of the most useful forest trees, rich in their foliage, and of the most graceful form; the ash, white wood, elm, oak and hickory; the sides and bottom also covered with the richest verdure. A small stream runs through it, fed, partly, by a copious spring in the vale, bursting out from the sides of the latter, and boiling up from the bottom in considerable volumes, and partly from the drain of the valley, as it passes into the interior above and forms a junction with the stream issuing from the spring, and a few yards below it. The gentleman has made a dam on the stream near his buildings, which makes a pond for watering his stock, and other purposes. There is deposited in this pond a rich sediment; he lets off the pond occasionally, to get this as manure for his farm. I saw the effects of it on some of his grass land, put on this season; where the manure from the pond was spread, the grass was nearly or quite a third larger and stouter, every way, than that beside it where there was none. We took a ride to see a friend near Newark, on the heights, in sight of it—a farmer; his farm was in similar order to the one described, in every way equal, and some might think superior—the grains and grasses full as good. This gentleman's farm, and a few of his neighbors, have recently been invaded by an army of grasshoppers. They were making dreadful ravages, especially in gardens; grains and grass (that is hay) would not be so much injured, although they might some. Indian corn and the second growth of grass would probably be much injured. The potato tops and vines appeared to be cut to pieces. These gentlemen, neither of them, raised vegetables for the Newark market, or any other; that is, to make that their sole business; they farmed, in the main, as farmers do fifty or one hundred miles in the interior, for the grains, grasses, hay, dairy, &c., There was some open draining. They manured well, plowed deep and thorough, and tillage generally of the best kind; their soil is rather of the stiff order, perhaps a clay loam, sand enough probably, to make it mellow and penetrable. If there were underdraining, it was not great, nor of the expensive kind, such as are made with tile and stone, and built up like the walls of a cellar, costing from $15 to $20 per acre. They have prospered, under this prudent and judicious course, as all their neighbors know, and many other circumstances would show, if I chose to adduce them. Other systems of farming may be attended with as much success, and perhaps some more; all I wish is, to state facts, and spread them before the great farming public. It must be admitted by all that the greatest economy and industry must be pursued in any and every system to succeed.

Prof. Mapes, editor of the *Working Farmer*, made the following remarks: The cultivation of roots as food for cattle is rapidly increasing. Both the economy and profit of root feeding is no longer a question. Many of them may be raised as second crops in the same season with others, and are good preparations of the soil, taking from it such constituents as are not wanted for the earlier crops of the following season; indeed, with the use of proper inorganic amendments to the soil, turnips, kaulirabas, and some other roots, are equally beneficial with a bare fallow. In districts where salt meadow and coarse hay is fed to cattle, the use of roots is nearly indispensable, and for milch cows they are found to add materially to the quantity of milk, and if properly fed, not to injure the quality. Thus either strap-leaved red top or ruta-baga turnips may be fed to cows immediately after milking without imparting any bad flavor to the milk, while carrots and parsnips may be fed at any time, and they not only improve the flavor, quality and quantity of the milk, but the former will add to the color and flavor of the butter, rendering that made in winter fully equal to summer-made butter. For fattening cattle, I would refer to the experiments of Mr. James Campbell, of Weston, published in my paper, by which it will be seen that the ox, when ready for the butcher, does not cost more than two-thirds the usual cost when fed without the use of roots. For horses carrots are highly valuable. They cure heaves in most cases, and when used in place of one-third the usual quantity of oats, they are found to equal them fully in value. Some writers have disputed this fact, because by analysis the carrot is not found to contain so much nutriment as the oat, but they have overlooked the fact that the carrot contains *pectic acid*, which has the peculiar property of *gelatinizing* the contents of the stomach of the horse, and thus facilitating digestion, so as to enable the animal to appropriate all the constituents of its food, instead of voiding many valuable constituents in an indigested state. When carrots are fed to horses with oats and hay, the droppings will be found to be homogeneous, instead of being mere masses of cut hay and the shells of oats. For sheep no food can equal turnips, and parsnips are well known to contain so much saccharine matter, that, either cooked or raw, they equal any other food for the use of cattle or hogs. The cultivation of sugar and other beets is daily increasing, and those who have used them most are loudest in their praise. The mangel wurtzel is also gaining in popularity, and on soil of an indifferent quality, Mr. Robert Rennie, of the Lodi Print works, New-Jersey, raised sixteen and a half tons to the acre last year. I will postpone any further general remarks, rather than detain the Club from the discussion of modes of cultivation of roots, &c.

The Secretary presented the following, prepared by him:

Highland and Agricultural Society of Scotland. March, 1851. On the cultivation of Mangel Wurtzel, a field beet, by Hugh Raynbird, steward to Melville Portall, M. P. Premium, five sovereigns.

"I will now make a comparison between the turnip and mangel wurtzel, and then describe the method of cultivation which has been practised with almost uniform success upon a farm where beet root formed about one-fourth of the root-crop. The two great properties which recommend the beet as a field crop, are, that it will succeed upon soil too heavy and retentive for the turnip; and that its earlier maturity, and the absolute necessity for its early removal from the soil, to be stored for use, render it a better preparation than the turnip upon those soils for the following grain crop. Another recommendation is, that it improves by storing, and that it does not come to its full perfection for feeding until late in the season. When turnips or *swedes* are either consumed or become unpalatable, and almost useless for fattening cattle, the beet root has arrived at its greatest perfection, and it may then be used with great advantage, as well as safety, for fattening animals. Early in the season it seldom forms a large proportion of food.

"Some of the most experienced graziers in the eastern counties, use white turnip until Christmas, then Swedes until Februry or March, keeping the mangel wurtzel in reserve for feeding in March, April, or May; and indeed, we have ourselves frequently reserved mangel for beasts as late in the season as July. In the spring, our fatting sheep have mangel cut for them when feeding off clover and rye-grass, and the box-fed beasts have a supply in the same manner, in addition to grass, clover, or tares, which are daily brought to them from the field.

"We have never made any comparative trials as to the feeding merits of beets; but those already published at least prove it to be equal to swedes, and much superior to the common turnip, and if we may judge from personal experience of its use, and from daily observation, we should consider it inferior to the swede for early use, but that no other root will bear comparison with it for spring feeding; and this is the opinion of a practical farmer, whose name I would give with pride and satisfaction if I *were* at liberty to do so, who has grown this root for nearly thirty years, both upon a stiff clay loam and upon gravelly and sandy soils, and with as much success as any farmer in the neighborhood. From what has been said it will be seen that I do not conceive that beet (however valuable it is,) will ever supersede the turnip, or any other root generally grown; but that it possesses many qualities which will render its more extended cultivation a valuable boon to the farmer who holds land that is favorable to its growth, whether upon the adhesive loams and alluvial soils of the East of England or those of other districts, and even as far North as the far-famed Carse of Gowrie.

We cannot doubt that the growth of the beet will extend to a much greater degree than any other root yet brought into notice. Its recent introduction—scarcely half a century—will justify this opinion. The varieties of beet worthy of attention for cattle feeding are the long red, the long yellow, the red globe, and the white sugar beet. It is thought the globe are most applicable to light soils. The land for beet requires an earlier, though not widely different preparation, from the land for turnips. It is sufficient that the land is clean and well pulverized; and upon all soils, but more particularly those of an adhesive nature, it is essential that this preparation should *be made in autumn*, and that upon stiff soils more dependence should be placed upon the frosts and rains of winter for a finely pulverized seed-bed *than upon any spring cultivation.* Upon free working soils, of course, this is of comparatively trifling consequence; therefore, upon stiff soils we would recommend the land to be well worked in the autumn, as early as possible after the removal of the grain crop, and that farm-yard manure should then be ploughed in and the land allowed to remain without further tillage until the time of drilling the seed in April or May, when a tine or two of the grubber and harrows may be of service in loosening and levelling the surface soil. Upon all tolerably free-working soils we would adopt the ridge or common drill system of growing turnips, applying a good dressing of farm-yard dung, and from one to two hundred pounds weight of guano or superphosphate of lime, sown broadcast previously to splitting the drills upon the dung. Upon land prepared in this way, in April or May, we drill about four pounds weight of seed, which is covered in rather deeper than turnips, by having a light roller to follow the drill. The future cultivation by horse and hand hoeing does not differ much from the turnip, though more attention is required in singling the plants; and upon rich soils, when the roots may reasonably be expected of a large size, the young plants must of course be singled out at proportionally wider intervals. A deficient plant may be filled up with transplanted cabbages or swedes, or if this be thought too expensive, the less costly, though less advisable plan may be adopted of drilling the ridges over again for swedes or common turnips. In October or early in November, previously to the frost setting in, (which will injure the roots very much,) the crop will be ready to store, and dry weather must be chosen for the work. Considerable attention is required to secure the crop in first rate condition. With us the three or four days of beet harvest is deemed of equal importance as the busiest time of corn-harvest, and it is a season of equal activity. Five or six men *or women* are employed in pulling the roots, twisting off the leaves, and laying each in small heaps for filling into carts, to be removed to the storing heap, which is generally conveniently placed for the homestead. The roots are stacked in a ridgelike heap, having a base of about five feet. This is first covered with a good coating of straw, and then with a layer of soil. In this manner the roots are kept from the frost and keep sound throughout the winter. In the spring the heap requires looking to, as violent heating, consequent on the vegetation of the young shoots, may come on, and be succeeded by a rapid decay of the roots; but nothing but common attention in removing the soil from the heaps is required to prevent this; and in many instances, when the roots are stored perfectly dry and free from soil, even this care is unnecessary."

He concludes by a statement of the cost of cultivation, which it is not necessary to state, so great is the difference between their labor and ours. The crop he estimated at twenty tons per acre.

[From the same.]

Analysis of Soot.—One ton, of 2,240 pounds of it, contains in its natural state,

	lb.	oz.
Moisture,............................... ...	237	14
Organic matter,................................	1002	1½
Chloride of ammonia, (sal ammoniac)	20	14¼
Sulphate of ammonia,..	80	3
Chloride of sodium, (common salt,).........	5	2¾
Chloride of potassium,......................	11	4¼
Oxides of iron and alumina,................	351	7½
Sulphate of lime (gypsum,).................	237	9⅓
Phosphate of lime (bone earth)......	11	13¾
Carbonate of lime,..........................	25	4¾
Lime (in a state of silicate)................	51	4¾
Magnesia do	8	11¼
Soluble silica (combined with lime and magnesia,)................................	89	14¼
Insoluble silicious matter (chiefly sand,).....	93	2½
	2,236	11

[Academie des Sciences, Paris.]

Preservation of Milk.—M. Martin de Lignac has been the first to do this well practically. He lives in a district abounding in milk of the finest quality, and there has established a manufactory to prepare milk for the navy. He has a patent. A large sheet copper pan, placed within a larger one containing water. In the bottom of this outer pan is coiled a tube, pierced with a great number of small holes. This tube communicates with a steam boiler, the steam from which heats the water. When the water is at the boiling point, fresh pure milk is poured in, so as to cover the bottom about the third of an inch deep; a small portion of powdered white sugar, 75 grammes (about two ounces) to a quart; stir continually with a wooden spatula. The evaporation is continued for two hours. When the milk is reduced to one-sixth its original amount, and is about as viscid as honey, then the steam is shut off and the thickened milk stirred violently for four or five minutes; after this, it is transferred to a copper, heated up to boiling water; and lastly is put into cylindrical tin boxes, the covers of which are fastened down by a strip of lead, which surrounds them. The boxes are then left in repose for twenty-four hours, and then the slip of lead is soldered down, to seal them hermetically. They are then placed in an apparatus in which they are subjected to a boiling temperature for ten minutes or a quarter of an hour. It is now complete. To use it, heat it with five or six times its bulk of water, and it resembles milk of the first quality in all respects. Extract by H. Meigs.

Dr. Antisell: The sugar beet of France is relatively small, but contains more sugar; another sort has none at all, and the latter yield great crops. Sugar cane gives 17 per cent of sugar, the beet 7. The sugar beet of France has destroyed the importation of the foreign cane sugar. The manufacture of beet sugar was tried in Ireland. Commerce contrived to get from government a duty on it of fourteen shillings per 100 lbs. This stopped the beet sugar; but recently that duty has been taken off by government, a million of pounds sterling have been invested in beet-sugar making in Ireland.

Professor Mapes remarked that during the continuance of that duty, Mr. Guppy made a syrup out of the beets which was sold as British honey, not liable to duty.

Mr. Meigs wished the club, at its next meeting, to be prepared with statistics showing for the last twenty-five years the state of the agriculture of the United States; in order to show how the good old method of farmers had, in thousands of farms, almost wholly sterilized them, and also what modern amendments in this matter have done to restore or add to the original richness of land.

The Statistics Approved.—Mr. Meigs repeated what he had before stated, that by a report to Parliament, in 1844 or 1845, it appeared that the entire agriculture of the year in Great Britain was worth three thousand millions of dollars, of which the turnip amounted to nearly one half. *So much for one root!*

Judge Van Wyck: They cannot raise our Indian corn, if they could they would find it superior feed to roots.

Mr. Meigs: Carrots are equal, bushel for bushel, to corn or oats, and 800 bushels can be had off an acre, and at most, a hundred of corn, or fifty of oats.

Prof. Mapes: If England was compelled to exchange all her roots for crops of Indian corn it would bankrupt her. As to carrots, parsnips, &c., experiment has distinctly shown that in feeding for pork, the roots make it for four and a half cents a pound, and corn for twelve and a half cents a pound. Campbell, of New Jersey, has fully demonstrated this and so have I. The carrot fed to cows in winter along with other feed, makes rich yellow butter in winter, equal to summer Goshen. Grow ruta baga on the best old farming plan with the richest barn-yard manure, and try the super phosphate of lime, and you will find the crop double and of far better quality, and more durable to keep. In feeding cows with roots we should avoid giving them near the time of milking. The taste and smell of the milk is not affected if the roots are fed to the cow some time before milking. The carrot aids the digestion of the horse so as to make his dung homogeneous—digests everything. Corn, (Indian) although cracked, commonly enough is, much of it, passed undigested, and *other animals feed upon it.* To sick animals I give carrots two days and they get well.

American Institute,
Farmers' Club, *Aug.* 5, 1851.

Judge Van Wyck in the Chair, H. Meigs, Secretary.

T. Selleck, of 51 Liberty street, New-York, produced specimens of Patent Zinc Paints, manufactured by the New-Jersey Mining and Exploring Company. These paints are made at Newark, New-Jersey, of the zinc mineral of Sussex county. The dark colored paints are made by grinding the raw ore of the zinc to fine powder. The pure white is formed by heating the ore sufficiently to sublime the zinc; this impalpable flour is caught in large sacks of cotton muslin. This beautiful article is about from sixty to eighty per cent. of the ore in weight. Any colors may be ground with it in oil. This flour of zinc is entirely pure from all grit. The paint, when dry, retains a polished surface like porcelain. The flour has no smell, is free from all those deleterious matters which render white lead so dangerous to painters and others exposed to the fumes of the lead. The unbounded extent of these mines and the richness of the ore will soon render it impossible to produce white lead in competition with it, on account of its far greater cheapness as well as its other good qualities. As far as trials have been made, it stands all weathers far better than white lead. Many painters who have used it, have already abandoned, chiefly, the use of white lead; some who are largely employed prefer the zinc; this painter is crowded with orders for the zinc paint.

The comparative qualities of white lead and zinc are properly as follows, viz: briefly,

White lead is pernicious to health.

Zinc white is perfectly harmless.

White lead turns quickly yellow.

Zinc white preserves perfectly its original purity.

White lead has an offensive smell.

Zinc white has no odor.

The workmen in white lead works are seeking employment in the zinc works, owing to the dangerous qualities of the white lead. It is said that the zinc paint has received the approbation of the French Academy, the sanitary councils of Paris, and of distinguished painters and architects of Europe. It has been used for six or eight months in the cabin of the steamboat Erie, which plies between our city and Piermont—the Erie Railroad boat. It has been repeatedly washed and exposed to the causes in the cabin, heat, smoke, &c.; it is for any one to visit and examine that specimen and he will see that it is worth all that has been said of it. The boat is at the foot of Duane street. This paint is now used extensively by our ocean steamers and others. There is nothing equal to it for painting iron and preserving it from rust; roofs of metal, wire fences, shutters, &c.

The Secretary read a letter from the Hon. Reverdy Johnson. This letter was in answer to mine, asking if this admirable result of science applied to farming was truly stated in the newspaper, *Evening Post* of Philadelphia, of July 5th, last.

The letter of the Secretary to Mr. Johnson, and his reply:

[From the Philadelphia Saturday Evening Post, July 5, 1851.]

Food for Plants.—A specimen of a soil of good appearance was given to Sir Humphrey Davy, from Lincolnshire, England, as remarkable for sterility. On analyzing it he found sulphate of iron. He recommended a top-dressing of lime; and the sulphate of iron was forthwith converted into the sulphate of lime; a noxious substance was at once changed into an object of fertility. It was the boast of Franklin that he stripped lightning of its perils and chained the thunderbolt. Chemistry does more. Poisons are changed by its alchemy into the means of subsistence.

The Hon. Reverdy Johnson purchased, in 1849, a small farm near Baltimore, in the last stage of impoverishment. Such was its reduced condition that the last crop of corn was not more than one peck to the acre. He states that all the vegetable matter growing on the two hundred acres of cleared land, including the brier, sassafras and other brushes, if carefully collected, would have been sufficient for the manufacture of one four-horse wagon load of manure. He applied to Dr. David Stewart, of Baltimore, an able chemist, who rode out to the farm and procured specimens of the soil, which he carefully analyzed. He found that it contained an abundance of lime, potash, magnesia, iron and organic matter, duly mixed with alumina and sand. One element only of a fertile soil was wanting, phosphoric acid; and of this there was no trace. He recommended an application to the soil of the biphosphate of lime, a preparation of bones, as the best mode of supplying the deficient element. The remedy was given at the expense of ten dollars per acre. It was the one thing needful. Health was restored to the exhausted patient, and the grateful soil yielded laat year twenty-nine bushels wheat per acre to the proprietor. Nothing else was wanting. Here was a beautiful triumph of science. There was no doubt about the facts; the experiment came under our observation.

AMERICAN INSTITUTE,
New-York, July, 29th, 1851.

My Dear Sir—I have seen in a newspaper a statement that you had recently purchased a sterile farm, and by amending its soil, by adding one inorganic constituent, which it had been deprived of by cropping, you had reaped some twenty bushels of wheat per acre where hardly any could be had before.

This is so valuable an experiment that we cannot forbear requesting from you a statement of it for our Farmers' Club, for ultimate publication in our Annual Report, published by the State, for 1851, which we will take great pleasure in sending to you, if acceptable.

Your most obedient servant,
H. MEIGS,
Secretary of the Farmers' Club.

Hon. REVERDY JOHNSON.

(*Copy.*)

BALTIMORE, 31*st July*, 1851.

My Dear Sir—I have this moment yours of the 29th. The experiment on my farm, to which you refer, was fully stated in the *American Farmer* of this city, and I will with pleasure send you a copy as soon as I can get one from the editor. It will gratify me to receive a set of your Farmers' Club Reports, which you do me the honor to offer for my acceptance.

With regard, your obedient servant,
(Signed) REVERDY JOHNSON.

H. MEIGS, Esq., *Secretary, &c. &c., New-York.*

The Secretary read the following extracts:

[From the London Farmers' Magazine, July, 1851.]

MANURES.—"As far back as 1784, the ever inquiring and indefatigable Arthur Young was employed on a series of experiments on the comparative value of manures, in which nitric and *sulphuric* acids were included. In these curious experiments, even the salts of *ammonia*, *charcoal*, and other fertilizers, which have too long been neglected. * * * * While I am at work on soils, the component parts of which I am ignorant of, for want of a laboratory, I am forced to form trials that take years to perform, in order to gain results that might be had in a day."

The first experiments with dissolved bones were made in 1841, by Mr. Fleming, of Barrochau, who dissolved the bones in muriatic acid, and applied them to moss oats.

[From the Journal of Agriculture, &c., Edinburgh, July, 1851.]

Bone Manure.—First of all, bone dust was found to be an excellent fertilizer, and forthwith bone mills were erected, and the osseous gatherings of towns and country were poured into them, in order to eke out the refuse of the byre (cow shed.) Nay, wide Europe was ransacked for this new and potent agent of fertility; the fields of the Continent were robbed of their long buried stores to grow the grain of England. The scenes of unforgotten strife, where the grass still grew rank and long, were opened for the sake of their hidden treasures, and a "valley of dry bones" would then have been prized like a golden mine. Leipsic, Waterloo, and far Borodino; Eylau, Lutzen, and Friedland, and many other bloody fields of fight, were thus ransacked; and not seldom did our wondering millers lift from amid the bone heaps fragments of shivered swords and rusty breastplates. But even the hundred battle fields of Napoleon failed at length to yield an adequate supply. Bone mills began to stand idle, and yet the ground clamored loudly for more. Then comes the guano, and that becoming scarce, search is every where made for something else. Soon, a rich though limited mine of manure was discovered in the beds of coprolites, which pass, like verdant zones, across many parts of England. The farmer's eye first rested reflectively on the superior luxuriance of these bands, and, with the eagerness of the gold seeker, he dug into their depths, to lay bare the cause. In those depths he found, strangely found, nodules, the fossil dung of enormous lizards or crocodiles, which, in *primeval ages*, had roamed over the south-eastern parts of our island. Analysis proved that those coprolites contained a *much larger quantity of phosphoric acid than the best bones.*

The countless herds of cattle that overspread the Brazilian Pampas (plains) used to be slaughtered solely for the sake of their hides. Now, the best of the flesh and tallow are saved for use, and the remaining mass of dry flesh and bones is exported for manure.

[From the Annales De La Societe Centrale, Paris, 1850.]

NURSERY TREES.—I have been long ago struck with a thing to which no one seems to have paid attention, and that is, upwards of one hundred years ago, nurseries of fruit trees were established at Vitry, at Paris, at Orleans, at Antwerp, at Rouen, &c. &c.

All these nurseries have delivered for setting out, many millions of pear trees every year, to be planted in France only. Now if all these pear trees had prospered, France is not large enough to contain them; and still the nurseries sell every year millions of them. A pear grafted on a quince ought to last 30 or 40 years if properly taken care of; and those grafted on pear stocks, should last from 60 to 100 years when planted in proper soil. So that there must be something about this matter not well understood—seeing how few pear trees are now to be found in France. I have them in London, large, fine and full of fruit; I never saw any thing like it in the environs of Paris.

Translations by H. Meigs.

[From the Annales De La Societe Centrale, Paris, 1850.]

Knight, of England, an excellent author, in reference to horticulture, says that almost all our pears are in an *alarming state* of degeneracy.

Plant all seeds of apples and pears in their *mash*—they grow much more promptly.

Van Mons sent me 84 kinds pears. As I tasted them I laid their seeds seperately; let them dry on paper without washing them. In the next Spring I planted them in suitable pots, (60 kinds of seeds) and kept them from frost—not a seed grew that year. In the fall I put all the pots side by side out of doors, and exposed to all the rigor of winter. In the following spring, all the seeds germinated and have been set out in the gardens of the Society.

See how I explain this. When you take a seed out of the fruit it is all covered with a viscous fluid, and as I did not wash the seed, this viscous matter concreted on them, forming an envelope strong enough to resist the developement of the germ for a year.

A gardener of Loisson tells me that the same thing happened to him in seed planting.

STATISTICS OF U. S. AGRICULTURE, FROM 1826 TO 1851.—As the value of Agriculture when compared with the other business of men, has greatly risen in the estimation of the civilized world within the last ten years, Governments, and the wisest men in all countries give new encouragement, by honors and by rewards.

In 1810, there had been commenced, on the exhausted land of the South, by a very few intelligent citizens, among whom John Taylor of Carolina—Virginia shines bright. He restored large fields to fertility, and hundreds of acres which had refused to give a bushel of wheat, gave twenty and more.

The view on each side of the roads from North to South, twenty years ago, was melancholy indeed. A desert made by man's own hands, the garden of Eden smitten with man's disobedience to the great original mandate to till the garden and keep it.

Like the army worm and the locust, they alighted upon a rich field to lay it waste—and as they became unable to live on it, removed to new lands but to recommence their ravages upon its natural riches. Nor was all this the only evil. Disease kept pace with the moves. Few, if any, remained long enough to enjoy the health resulting from long clearing—much less the beauty and profit of long continued, good cultivation. But all this darkness of that period begins to disappear. The Profession heretofore confined within the walls of Colleges from the most ancient days, now find profit and fame in carrying their Science into the fields—and men of wealth open their purses and give out their sovereigns, or their dollars, to reward the farmer for his good deeds, and yet more, associate with him. No longer treating him like a boor, but as a citizen of distinguished importance.

It is true that the opinions of farmers having been derived from their ancestors, generation after generation, and they but little used to free intercourse with men—rarely traveling beyond their own country—are exceedingly deep rooted, like their own oaks, they resist all changes.

While all other works of man have changed, while the low narrow cottage has changed to a beautiful farm dwelling, while the barn has enlarged to the size of a church, where the farming is good, still the mass live on and wear away the soil and life, in the midst of ignorant, careless, slovenly existence.

Reform! reform!—the outcry of modern nations for change of government or religion—had better be for universal emancipation of the glorious land given to us by the Lord our God, from the piteous abuses to which human ignorance and *vice* have heretofore doomed so much of it.

About forty years ago, among other wise men, John Taylor of Virginia, a distinguished member of the United States Senate, and Governor of the State, made use of the following language in his "*Arator*, the ploughman," a duodecimo book of his.

The Senator was a practical farmer on a large scale, and restored fertility to a large body of land worn out by bad management. He begins his little book by quoting an Englishman.

Mr. Strickland, an Englishman, reputed to be sensible and honest, published at London, in the year 1801, a pamphlet upon the agriculture of the United States, being the result of his own observations during a considerable period spent in traveling through the country, for the special purpose of investigating it.

The judgment of this impartial stranger appears in the following quotations:

Page 26, "Land in America affords little pleasure or profit, and appears in a progress of affording less." Page 31, "Virginia is in a rapid decline." Page 38, "Land in New-York, formerly producing twenty bushels of wheat to the acre, now produces only ten." Page 41, "Little profit can be found in the present mode of agriculture of this country, and I apprehend it to be a fact *that it affords a bare subsistence*." Page 45, "Virginia is the southern limit of my inquiries, because agriculture had there already arrived to its lowest state of degradation." Page 49, "The land owners in this State are, with a few exceptions, in low circumstances; the inferior rank of them, wretched in the extreme." Page 52, "*Decline has pervaded all the States*."

Upon reading the opinion of this disinterested foreigner, my impressions were indignation, alarm, conviction; inspired successively by a love of country, fear for its welfare, and a recollection of facts. The terrible fact that the strongest cord which vibrates on the heart of man, cannot tie our people to the natal spot, that they view it with horror and flee from it to new climes with joy, and lead to an ultimate recoil from this exhausted resource to an exhausted country.

A patient must know that he is sick, before he will take physic. One fact apparent to the most superficial observer is, that our land has diminished in fertility. It is the object of agriculture, as an art, not to impoverish, but to *increase its natural fertility*. Its object being to furnish man with articles of the first necessity, whatever defeats that object is a *crime of the first magnitude!* Had men the power to obscure or brighten the light of the sun, by obscuring it they would imitate the morality of diminishing the fertility of the earth. Is not one as criminal as the other?

Had the products of agriculture kept pace with the increase of population for the last sixty or seventy years past, (that is, since about 1750,) the native agricultural exports of the United States, instead of being as they now are, about seventeen million of dollars, would have been one hundred and twenty million of dollars.

Let us boldly face the fact: Our country has drawn out of the earth three-fourths of the vegetable matter it contained *within reach of the plough.* If we suck our mother to death we must die ourselves. Though she is reduced to a skeleton, let us not despair; she is indulgent, and if we return to the duties revealed by the consequences of their infraction, to be prescribed by God, and demonstrated by the same consequences to comport with our interest, she will yet yield us milk. We must restore to the earth its vegetable matter before it can restore to us bountiful crops. Forbear, oh, forbear, matricide! not for futurity, not for God's sake, but for your own sake. The labor necessary to kill the remnant of life in your hands will suffice to revive them, and give plenty and happiness.

DEEP PLOUGHING.—It is at enmity with shallow ploughing, because it *admits atmospherical manure* into the earth by water and air to it; it accords with deep ploughing because it enables the earth to absorb more atmospherical manure through the two *great vehicles, air and water,* and because it buries deeper the manure deposited on the earth, *inhaling* thus *more* and *exhaling less.*

Pumpkins, by means of shading the earth with their leaves, are good for the land.

Gurneyism—Meigs.

Same subject continued—Statistics of Agriculture.

The Club then adjourned.

H. MEIGS, *Secretary*

AMERICAN INSTITUTE,
Farmers' Club, *Aug*. 19, 1851.

J. T. Walden, Esq., in the Chair, H. Meigs, Secretary.

The Secretary read the following translations and extracts, prepared by him:

Taylor on Draining Forty Years Ago.—The Campagnia, and some other flat and marshy districts of Italy, are recorded in history as having been made so delightful in the flourishing period of the Roman Empire, by draining, as to have been selected by the opulent for country retirement, and for splendid palaces. The drains neglected by the barbarous conquerors of Italy, have never been re-established by its modern inhabitants; and the swamps and the marshes have restored to these districts an uninhabitable atmosphere, by having their waters, their trees, their verdure restored to them.

As new countries are cleared and ploughed, health improves. I long since concluded that we should resort to every species of draining, and having removed some years past to a farm, reported to be extremely liable to bilious fevers, I threw several small streams into deep ditches; dried a wet road leading to the house, by open and covered drains, and I drained and cleared some acres of springy swamp, closely covered with swamp-wood, lying four or five hundred yards, south of the house. The multitude of springs in this swamp, made deep central and double lateral ditches entering into it, *every six yards*, necessary throughout the ground. The labor was great, but the wet thicket is now a clean, dry meadow. Perhaps an attachment to a theory may have caused me to imagine that the improvement in the healthiness of my family, and the draining improvements have kept pace with each other; but I am under no delusion in asserting that the healthiness of no part of the world, (according to the tables of mortality which I have seen,) has equalled it. And the swamps, bogs and marshes constitute one of our best resources for recovering the exhausted high lands, as furnishing employment for labor and funds for manure. If the bounties of draining include an improvement in salubrity, in subsistence, in profit of exhausted lands, they ought to excite an ardor which will presently leave behind the few and plain remarks which I shall make upon the subject, or at least to awaken great districts of country, to the facts that their best lands, those capable of yielding the most profit, if not those capable of yielding any or much profit; lands able to support more people than those at present under culture, lie wholly useless—except it be to *kill people who are employed in killing land!* and thus shelter the survivors, in some measure, against the evils of penury.

The senator might have added to his list of the benefits of draining, one fact of a most consoling kind for the cost and labor of the work, and that is, the delightful reflection that when the good work is accomplished, it is done, and the blessing is fixed for ages.

[From the London Quarterly Review, April, 1851.]

We are pleased to see in this distinguished work the subject of poultry, the first article, extending to eighteen pages of double columns. The American Institute was the first institution offering premiums for improved poultry, as it was likewise for the best spading. The Quarterly heads the article, "*Poultry Literature.*"

"Every body knows that there is a fashionable world, a literary world, a sporting world, and a scientific world; but every body does not know that there is a poultry world, with its jealousies, excitements, preeminences, and interests, just like any other world, which revolves cycle on epi-cycle, orb on orb, in the midst of the great universal world itself.

Not a few renowned naturalists have disdained in toto the scrutiny of domesticated animals.

We Cockney purchasers of poultry at Leadenhall market are made easy prey.

Poultry and plagiarism seem to be bound together by some mysterious relationship or mesmeric affinity. Nor is this alliance at all a recent one. The Romans were as bad as the French and English. For instance, Varro, lib. III., chap. XX., tells us how an expert goosemaster would proceed in choosing his breeding geese. The parallel instruction in Columella is at lib. VIII., chap. XIV., where we find just enough of amplification and alteration of phrase to deprive the latter scribe of all chance of the beautiful supposition that he had made a quotation and forgot to acknowledge it. But in these passages we have double classical authority for the two important facts—that the domestic goose will not sit on any eggs except those she herself has laid, and that the gosling must be cautiously turned out to pasture, lest he break his neck by tugging indiscreetly at the tough herbage. A fact of a different class to be gathered from them is, that geese, two thousand years back, were exactly what they are *hodie* (to-day.) Some parti-colored, supposed to be mitigated from the wild sort, and others *white*, which *then*, as *now*, were held in highest esteem as breeders.

As to the origin of our various breeds of domestic fowls, for they are no longer found wild, any more than the camel is. With the pedigree of domestic turkeys and Guinea fowl we are well acquainted. Most, though not all, naturalists agree that the domestic goose is the direct progeny of the grey lag; and farm-yard ducks, according to the nearly universal creed, are nothing but tame mallards. Walter B. Dickson, in his Poultry book of 1838, patronizes Sonnerat's cocks and hens as the Adam and Eve of all fowls. "This species," he says, "which is three feet four inches in length, inhabits the great forests of India, continue to reproduce there, and is clearly distinct from the domestic races reared by the Hindoos (that is quite true,) as these resemble, in all respects, the other tame breeds in every quarter of the globe." Mr. Sonnerat, however, thought very differently.

There is no evidence of a greater number of kinds of domesticated animals now in the world than have been from the earliest period of history.

It is taken for granted that every domesticated bird and animal must have passed through the wild state—have been primitively shy, intractable, and unattachable, and been made docile, domestic, and confiding by the cares and wisdom of man. [They were all created some time before man. *Vide* Genesis—H. Meigs.] The proposition assumes that the Almighty Creator could not, or would not, make a tame animal.

We, in these latter days, can make neither the shy bustard nor the gentle guan available in our poultry yards. We cannot harness the zebra, tempting as is his pattern, to our Lord Mayor's coach—nor induce the jackal to point and set, so as to become Cumming Gordon's, instead of Zao's provider. Bnt these harrassed, toiling, wayworn patriarchs could train for us the horse, the dog, the fowl.

Mr. Sundevall says the Bengal jungle fowl is, beyond all question, the exclusive aboriginal stock from which the whole of our domestic varieties of common poultry have descended.

Sundevall is quite wrong in stating that any Hindoos ever breed fowls; the mere touch of one, or of an egg, is pollution even to the lowest caste of them.

Aldovandrus devotes some fifty pages of his large folio to poultry. He becomes eloquent when he handles the *usus in cibo*—their uses on the dinner table. "By this, almost alone, are we aided on the sudden arrival of friends or guests. To this we ought to refer the chief elegancies of our table, whether it be sumptuous, moderate, or sparing." Galen says, that if the cocks are yet tender, namely, cockrels, their flesh is to be enumerated among the fleshes which afford the middle quality as to making lean and fat; for it is easily digested; it generates laudable blood; it conciliates affection; it agrees with every kind of temperament, especially if the birds are moderately fat, *and have not yet crowed.*

The ancients loved fat hens. Pliny says that the Fat Hen Law of C. Fannius was passed eleven years before the third Punic war, but a mode of evasion was found out. That law forbade serving at table more than one single hen, and that not fatted. The Gauls thought the rumps of fowls were military meat, and called their veteran soldiers *uropagiorum voratores*—rump devourers.

[From the London Quarterly Review of July, 1851.]

On Gardening.—We are pleased to see this subject selected as the first one of this number of that distinguished work. It is another evidence of the growing importance of it. We therefore extract the following:

The Poet Cowley said, "I never had any other feeling so strong and so like to covetousness, as that one which I have had always, that I might be master at least of a *small* house and a *large* garden, with very moderate conveniences joined to them, and there dedicate the remainder of my life only to the culture of them and study of nature. How many hundred thousand times in each of the nearly two hundred years since this epistle to John Evelyn, Esq., was written, has the same ardent longing been breathed by lips that pant to inhale the fresh breeze of the country, instead of the smoke-laden air of the town! *Give me but a garden!* is the aspiration sighed forth in cities and in solitudes, by children and their grandsires."

I. P. Tupper says, "If sensation be imputed to plants, it may with propriety be asked, whether they are furnished with organs similar to those which are the the seat of sensation in animals? Perhaps this would not be easily proved by ocular demonstration; nor, indeed, is it necessary that the sentient organs of vegetables should have the same structure, seeing that all those other parts which they are allowed to possess in common with animals, sensibly differ in their form and character."

Dr. Darwin, in his Phytologia, remarks, that vegetables resemble animals in having absorbent, umbilical, placental, and pulmonary vessels, arteries, glands, organs of reproduction, with muscles, nerves, and brains, or common sensorium—nay, he adds, "It is not impossible, if Spallanzani should continue his experiments, that *some beautiful productions might be generated between the vegetable and animal kingdoms, like the eastern fable of the rose and the nightingale.*"

At the present epoch, the horticultural societies and the great nurserymen have their active agents surveying the world from

China to Peru, the amateur gardener can hardly get on with satisfaction to himself, especially among his flowers, without acquiring some knowledge of botanical arrangement, and, therefore, at this point of our discourse, let us give the beginner a caution not to be persuaded into the belief that the Linnæan system is altogether obsolete and good for nothing.

Some complaint is made against the system adopted by Dr. Lindley in his vegetable kingdom. Evelyn helps to mark the introduction of several of our cultivated vegetables. Of Artichaux, he tells us, (Acetari:) 'Tis not very long since this noble thistle came first into Italy, improved to this magnitude by culture, and so rare in England that they were commonly sold for crowns apiece; but what Carthage spent in them, as Pliny computes the sum, amounted to sestertia sena millia, or thirty thousand pounds sterling. Note.—That of the Spanish Cardon, a wild and smaller artichoke with sharp pointed leaves and lesser head, the stalks being blanched and tender, are served up *a la poiverade*—that is, with oil, pepper, &c., as the French term is.

Of Pompey's beloved dish, so highly celebrated by old Cato, he says: "'Tis scarce an hundred years since we first had cabbages out of Holland. Sir Anthony Ashley, of Wiburg, St. Giles, in Dorsetshire, (ancestor of the Earl of Shaftesbury,) being as I am told, the first who planted them in England. Of the melon he bids us note that this fruit was very rarely cultivated in England, so as to bring it to maturity, till Sir George Gardner came out of Spain, I myself remembering when an ordinary melon would have been sold for five or six shillings, ($1.50.) Spinach was "by original a Spaniard." Zarragon also, and the cauliflower (anciently unknown,) from Aleppo. Asparagus was a favorite vegetable with Cato. Onions are incrutable. Others are quite modern upstarts. Sea kale is one of these, and a true British dish it is. Mr. Curtis, in his "Directions for cultivating the *Crambe Maritima* or Sea kale, (in 1799,) tells us:

"Mr. William Jones, of Chelsea, saw bundles of it in a cultivated state, exposed for sale in Chichester Market in the year 1753. I learn from different persons that attempts have been made at various times to introduce it into the London markets, *but ineffectually*.

Rhubarb affords the latest instance of the intrusion and establishment of strange herbage in our kitchen gardens.

Cuthill in his practical instruction for the cultivation of the potato, &c., 1850, says, "That Mr. Joseph Myatt, of Deptford, a most benevolent man, now upwards of seventy years of age, was the first to cultivate Rhubarb on a large scale. It is now nearly forty years since he sent his two sons to the Borough market with *five bunches, of which they could sell only three!* The next time they took ten bunches, all of which were sold. Mr. Myatt now thought it would become a favorite, and determined to increase its cultivation. He was indebted for his first dozen roots to Mr. Oldcare, gardener to Sir Joseph Banks. They consisted of a kind imported from Russia, firm and much earlier than the puny variety cultivated by the Brentwood growers, for Covent Garden.

Mr. Myatt had to contend against many prejudices, but time, that universal leveller, overcame and broke down every barrier, and rhubarb is no longer called "*physic*."

If ever our admirable palace of glass becomes a showy, steamy, suffocating Jardin d'Hiver, (winter garden) it will be a capital thing for the apothecaries; such a vigorous crop of colds, coughs and consumptions will be raised there, that it will be the walk if not the dance of death to frequent it.

The subject of gardening occupies the first sixteen and a half pages of the July number of this Quarterly.

Beirut, Syria, July 16, 1851.

My dear Sir,—I take the liberty of writing you, to inquire concerning a matter in which I have taken some interest since my residence in this country, and which I desire to take hold of in my own; and that is the culture of silk. It is produced in large quantities in this part of the world, and I have studied the subject with a good deal of interest. My present object in writing is to ascertain whether there are any good places on Long Island, or in New-Jersey, or on Staten Island, or in Westchester county, to be had, which are suited to this business. I should like to hire a farm or place of from 50 to 100 acres of good land, from next spring, with the privilege of purchasing at a future day at a given price. I am inclined to think New-Jersey is well suited to the cultivation of the mulberry, as the soil is rather dry, and it is milder there. But your judgment will be superior to mine, and by consulting your friends who understand the matter, you may be able to give me some desirable information. I do not wish to go far from New-York, nor be far removed from the facilities of getting there in one or two hours, by railway or steamer, the nearer the city the better. I have noticed the articles in the *Farmer and Mechanic*, some old numbers of which I have here, on this subject, and the reports of the meeting of the Farmer's Club. If Mr. Van Epps is still in New-York he may know of some good place, or Mr. Meigs.

I should like your views in regard to a suitable place. I intend to take out some broussa seed and such as is used here, and some trees, if I find a vessel going at the right season. You may hear of a place with the mulberry trees already upon it, or know of some party who has the trees to sell. I may go out to the United States this fall, if so, will call at the Institute. I consider myself a member of it, as I was many years ago appointed corresponding member at Glasgow. An uncle of mine, Junius Smith, Esq., you know, I presume.

I have had the honor to represent my country here as Consul for some time, but think I shall return to the United States next spring, with my family, to grow silk, and I shall esteem it a great favor if you will aid me in procuring the information I desire; and I beg you to command my services here, if they can be useful to you or the Institute.

I am, dear sir, yours truly,

J. HOSFORD SMITH.

P. S.—On reflection, I have decided to trouble Mr. Meigs, as I have the pleasure of knowing him, though he may not remember me, and I beg he will allow me to reciprocate in any way agreeable to him. I should like a place that has been fairly cultivated, and has some fruit upon it. I intend to cultivate also the grape to a moderate extent, the catawba, and may also try some fine varieties from this country, though I have little faith in their success in the United States, though they are natives of Mount Lebanon. I notice a farm of 120 acres in Westchester county, advertised by A. & J. Sargeant, 15 Wall-street, and several in New Jersey and on Long Island.

Pardon me the trouble I give, and believe me, dear sir, very truly yours, J. H. S.

HON. REVERDY JOHNSON'S EXPERIMENT IN AGRICULTURAL CHEMISTRY.—In the last report of the Farmer's Club, this distinguished experiment was mentioned, and fully acknowledged by Mr. Johnson as exactly correct.

About thirteen months ago Mr. Johnson acquired the farm on which the experiment was made; 300 acres about two and a half miles from Baltimore, (west;) 200 acres cleared, originally good, but utterly impoverished by a long course of bad husbandry. The soil contains a very large proportion of iron. So complete was its exhaustion, that when I first saw it, all the vegetable matter growing upon the two hundred acres of cleared land, (including the briars, sassafras, and other bushes,) carefully collected, would have been insufficient for the manufacture of one farm-house load of barn-yard manure. The field selected for the experiment contains ten acres, embracing the slope of two hills, and a small valley intersecting it diagonally. It was at that time in corn, and did not produce *one peck of corn to the acre, although it had been cultivated in the usual manner and with ordinary care*, and the season had not been below the average of seven years.

I procured the services of Doctor David Stewart, of Baltimore, so justly distinguished for his scientific attainments. He visited the farm, selected samples of the soil, and minutely and carefully analyzed them. He found nothing wanting but phosphoric acid, which there was not a trace of. He prescribed a composition, which was made up by those skilful gentlemen, Messrs. Kettlewell & Davison, of Baltimore. The corn was then cut up at the ground and removed. The field was ploughed, harrowed, and laid off into sixteen and a half foot lands. The preparation was then scattered regularly over it, costing all told, ten dollars per acre. One and a quarter bushels of Mediterranean wheat was sown to the acre, about the first of November, and harrowed in. *No barn-yard, or other manure was used.* The yield was more than twenty-nine bushels per acre, although the crop was badly harvested, and the field not subsequently raked.

Doctor Stewart states, "the reason for using the bi-phosphate of lime on a soil will be seen by the following careful analysis of that soil. In my note book I made the following comment on the occasion of my visit to the farm.

Sample of soil from the farm of the Hon. Reverdy Johnson, yielding about half a peck of corn per acre:

Sand and bases insoluble,	71 20
Lime,	00 30
Magnesia,	00 40
Manganese,	00 10
Potash,	00 23
Water and organic matter,	10 07
Phosphoric acid, no appreciable trace,	00 00
Iron and alumina,	17 70
	100 00

I recommended to be added to this soil the purest preparation of phosphoric acid that we can adapt to agricultural purposes. The result has proved, that bones dissolved in oil of vitriol—in other words, bi-phosphate of lime reduced to powder, with slaked ashes, supplies the defect.

It is demonstrated, that bones, lime, plaster and salt, are only relatively good, and that even the *best guano* must fail, if applied to soils that require some other substance, that the experience of the *most intelligent and best farmer in the State*, with regard to the comparative value of bones and lime, is *worthless*, except he can also prove that all farms are composed of the same proportion of lime, phosphoric acid, &c. But the prejudice against these doctrines is so strong, that *personal abuse* is frequently fulminated against those who *deny the universal application of any means*, or the value to the public of any multitude of experiments, *except the composition of the soil upon which the various experiments were tried, is also given.*

DAVID STEWART, M. D.,
No. 77 N. Eutaw-street, Baltimore.

The Secretary then read the following extracts and translations made by him:

[From La Normandie Agricole. Presented by A. Vattemare.]

TEA.

The journals lately announce that a gardener had found means to make tea grow in the environs of Paris and of Antwerp; and they say that the infusion, taste, and aroma of this tea are in no respects inferior to the tea of China. The only objection is, that when the leaves are dry, they exhale a perfume not so agreeable. This is believed to be attributable to the bad preparation of the leaves.

The culture of tea in France is neither new nor astonishing. The tea plant was imported by Linnæus, in 1763. It grows in latitudes where the cold is from six to seven degrees (i. e. about 16 or 17 of Fahrenheit,) and often remains some time buried in snow. Therefore, it is not the temperature, but the climate, which is opposed to its cultivation profitably in France.

At various periods attempts have been made here to grow it. The plants grew well, and supported the rigorous winters without suffering. But, whatever the reasons of it may be, the leaves proved to be of an inferior quality to those of the East Indies. Whether the art of preparing them is unknown, or whether the product costs too much care and money, the tea culture has nowhere been persevered in.

The first essays at its culture were made in the year 1765, in Paris and in Corsica, and prospered for 25 years, when, without any known motive, it was renounced. Since that other essays have been made in divers places in France, at different periods, but with the exception of Corsica, it had no success. The vegetation of the plant was beautiful during the first year, and sometimes the second, but the quality of the leaves always degenerated,and when dried they lost their aroma, yielding but a very middling kind of tea. Up to the year 1831 its cultivation had been attempted, but the result was always the same—poor tea. We find that the efforts of the British East India Company to grow tea in their Indies is a failure comparatively.

[La Normandie Agricole.]

DIETETIC PROPERTIES OF THE CARROT.—In all countries where agriculture is in an advanced state, the carrot enters into the feeding of cattle and other farm stock for many months in the year, and it is a refreshing and wholesome nourishment. The German Doctor Haubner considers it, besides, as an excellent preservative from prolonged dry coughs and the strangles and other catarrhal maladies, as well as the heaves, and all affections of the breast. The carrot is also, in his opinion, salutary agrinst worms in the intestines, is good to restore lost appetite and for bad digestion.

PRESERVATION OF FOOD.—Experiments have been made of the effect of great pressure for preservation. By means of the hydraulic press, bread has been made as hard as stone, and kept good for a long time. Bread pressed from four inches to one, was in perfect preservation at the end of a year, and on being soaked in warm water resumed its natural size. Potatoes also kept well as long a time. This process is deemed important both for keeping and greatly reduced stowage. Farther experiments are to be made.

SALT AS A MANURE.—No one in our country has yet made any extensive experiments on the uses of salt as an amendment of the soil. The use of salt in agriculture is of the highest antiquity. The Chinese and the East Indians employed it to enrich their farms and gardens. Pliny states that the Assyrians of old put salt around the roots of their palm trees. Among moderns, the English have, above all others, studied its agricultural uses.

Salt used as an amendment of the soil when added to animal dung hastens its solution and renders it more fit to furnish to plants the elements of strength and growth.

Experiments prove that the action of plaster is augmented by the addition of a certain quantity of salt. Many results of the experiments with salt are given.

Gourmands testify to the excellent quality of the mutton fed on salt meadow.

Salt is essential to the health of cattle, &c.

[From the Journal of Agriculture.]

The Highland and Agricultural Society of Scotland. March, 851.

Flax Culture.—We have been sedulously laboring to extend the culture of the flax plant to those poor and remote localities, as the four or five millions (twenty-five millions of dollars,) of pounds sterling, now annually paid to foreigners for the material, if distributed at home, would, by creating feelings of self-reliance among the people, tend to show them that the natural resources of the country are amply sufficient, if fully developed, to support her population. From the sowing of the seed to the finishing of the woven fabric, all the operations of this branch of industry are performed at home, affording employment alike to ths farmer, the agricultural laborer, and the artisan; creating an intelligent and enterprising middle class of manufacturers, the want of which is much felt in other districts of Ireland; and by the export of the products, contributing to the employment of our mercantile navy, and affording an item of exchange for the productions of foreign countries.

The Belfast Flax Improvement Society say, "Flax should not be grown on potato ground, but on stubble, which should be ploughed deep in November and let lie over till spring, then second ploughed, harrowed and prepared fine and clean, and the seed (which should be Riga, when attainable,) sown either in the last week in March or the first week in April."

[Annales de la Societe Central d'Horticulture de France, 1850. Paris.]

At the session of the Society, on the 6th of June, 1850,

Under the direction of M. Ebelman, the master of the national manufacture of porcelain at Sevres, two young artists attached to that establishment made experiments before the Society of a new process, to be a substitute for the common way of moulding.

It consists in pouring the liquid porcelain matter (called *barbotine*,) into moulds made of plaster which absorbs water with great avidity. The porcelain paste which remains fixed to the sides of the plaster mould, is afterwards easily detached. In this way they mould medallions and sheets for painting. By this means they obtain very thin cups by pouring liquid porcelain in paste into plaster moulds of suitable shape. They have succeeded in overcoming a much greater difficulty—that of adding handles to the cups, of the most delicate kind, and every species of ornament. These handles are hollow. They are cast in halves, and then united. The barbotine first flows very clear and liquid, in order to penetrate and perfectly fill up all the details of the ornament; afterwards they pour in two other beds, thicker than the first. The operation, made under the eyes of the Society, lasted about a quarter of an hour. They soldered the handles with porcelain paste, after having wetted with gum water the points of contact in the cups and the handles. The Society witnessed these operations with great interest, and desired the president to express to Mr. Ebelman their warmest thanks.

Chairman.—Thinks the difficulty here is the want of cheap labor.

Judge Van Wyck.—The same, doubtless, as to soil.

Mr. Youman.—Even if the Chinese should come here they will find higher priced labor.

Judge Van Wyck.—Brazil has succeeded to some extent for many years.

Mr. Youman asked whether the Apatite of Jersey or Lake Champlain is yet much in the market.

Mr. Selleck.—A railroad is contemplated to the Jersey mine. He proposed the Apatite as the next subject. Carried.

Judge Van Wyck.—The falling off of much of our land owing to bad management, is not so universal as some suppose. The Patent Office reports show a great increase of amount every year, or terms of years. Can there be, then, so great a degeneracy in farming and soils, on the whole? Wheat pays poorer than any other article that is cultivated by the farmer—his fruit, his grass, dairy, Indian corn, &c. He cannot make money by it, and therefore turns his attention to other things, such as those last enumerated. I wish to enlarge on this point at the next meeting.

Adjourned to the first Tuesday in September next.

H. Meigs, *Secretary.*

American Institute,
Farmer's Club, Sept. 2, 1851.

Ira B. Underhill, of New-Jersey, in the chair, H. Meigs, Secretary.

About thirty members present from Connecticut, New-Jersey, and this State.

The Secretary read the following extracts from the *Edinburgh Review*, of July, 1851.

Extracts:

"Modern Chemistry—its progress, &c.—Among the modern sciences which in their nature and progress partake most of the character of the advancing material civilization of the nineteenth century, chemistry holds the first rank. Of that advancing civilization it may even be said to form a main part or element.

"One of its special duties is to discover hidden and unknown properties and uses in things—to lay open the unsuspected riches of kingdoms. No branch of positive knowledge can boast a history so full of interest and romance as this, or one which presents a more tempting field for a literary excursion, either to a writer or a reader. Not only has the range of pure chemistry, as a whole, become so vast that scarcely any one mind can grasp it, or, in a fair measure, master its details; while by way of simplification, separate divisions have successively been made into mineral and organic, and the latter again into animal and vegetable chemistry; but so many new arts have arisen from the application of its principles to useful and ornamental purposes, that it would fill a bookseller's catalogue to name only the latest published and best books which relate to all the separate or special branches. Five-and-twenty years ago, only three or four men held open schools for teaching its most difficult departments. Now, at least thirty professors, scattered over the island, teach it systematically, and at least as many more instructed chemists obtain a living by superintending or giving advice on its numerous applications. Of the rate at which the science is now making way, a popular notion may be formed from the contents of a German book, the "*Handworterbuch der reinen und Andgewandten Chemie*," is a dictionary of pure and applied chemistry, which began to be issued a few years ago. It has now reached the letter K, nevertheless, to bring up its accumulated arrears, a supplement of 440 pages has been issued.

For ages particular streams were famed for their efficacy in steeping flax, and enjoyed the reputation for centuries. But a new mode was devised by Schenck, owing to a chemical discovery. This invention shortened the process of steeping to a few hours. Another chemical process here steps in, tears still further in pieces the single hollow fibres of the flax, and produces a material which resembles cotton in appearance, can be spun with the same machinery, and according to the discoverer, M. Claussen, may, in all probability be brought into the market at a price low enough to compete successfully with natural cotton.

Among the substances which are contained in and are necessary to the composition and usefulness of the bread of man, is one to which chemists give the name of phosphate of lime. This material the growing corn extracts from the soil. Without its presence in sufficient abundance in the earth through which its roots spread, the plant flourishes poorly, the ear is ill-fitted, and the produce of grain scanty. The bones of animals contain this phosphate of lime, and it has for half a century been customary to apply them in a crushed or bróken form to the soil to fit it for the healthy growth of luxuriant crops of corn. But chemistry established the fact that certain stones and rocky masses which occur in various parts of the earth, contain the same phosphate of lime. It has recently, therefore advised the grower of grain to take advantage of these mineral masses. And now, after previous preparation, by a simple chemical process, they are extensively employed to impart fertility to the soil. The proportions constituting the phosphate of lime are 28 lime added to 28 of phosphoric acid. In the account of the temptation of our Savior, the tempter said, "If thou be the Son of God, command that these stones be made bread." It is done.

It is a matter of great gratification that this subject now occupies journals of such distinguished rank as the Edinburgh and London Reviews.
H. Meigs, *Secretary*.

Maj. Farrington was introduced by Prof. Mapes, and said:—

Mr. Chairman—In describing the mine of phosphate of lime, located in Morris county, New Jersey, I shall not long detain you in giving a geographical description. It will be sufficient to state that it is in Jefferson township near the head of Brookland Pond, and that boats navigating the Morris canal, can load within a few hundred yards of the mine. Its geological position is interesting, as it appears to be an intrusive mass or vein cutting, through primitive formations. Sienite lies each side of it, and is the prevailing rock of the district. Its course is from N. E. to S. W., having a dip to the southeast. The phosphate of lime is associated with magnetic pyrites. The vein of lime is over four feet in width and widens as it descends. The shaft has not been sunk more than 30 feet. This mine and the mining rights covering an area of several thousand acres around it, are the property of an incorporated company who are making arrangements to work or mine the phosphate on an extensive scale. The supply, however, will be limited until time is expended in sinking larger and deeper shafts. Not more than one thousand tons per month can be mined at one shaft, working night and day.

As it may be an object with this society to know the price it will be afforded in this market, I will state that the directors consider that the price sold at here should be the same as it will bring in Europe, less the cost of transportation. They have orders at present at $25 per ton, delivered in Liverpool. It has been found a valuable substitute for bone dust for other purposes than fertilizing soils, and will be used extensively for cupelling purposes. The article at $25 per ton is about equivalent to bone dust at 36 cents per bushel, and is less bulky, besides containing from 4 to 7 per cent. of fluate of lime, an active agent in fertilizing silicious soils, not found in bones.

The chemical composition of this substance has so often been given by chemists, that any repetition of my own experiments are unnecessary, and professional agriculturists have so often explained its fertilizing properties that theorizing at this time might be considered out of place. But, with your permission, I will state a few facts in relation to its application that I have observed this season, and that have come to my knowledge from reliable sources of information.

First.—Upon a light sandy soil planted with maize or Indian corn about the first of May, the seed having been soaked in a solution of nitrate of potassa twenty-four hours previous to planting, alternate rows received in each hill about a table spoonful of prepared phosphate, two weeks ago the appearances indicated a double or treble crop. Where the phosphate was used, the stalks were larger, the ears more numerous and better filled.

Second.—Another field of corn, soil considered a lean one, was crossed by four rows each way through the centre, with a dressing. In July, these rows were easily distinguished from the rest of the field, by their deep green color, and standing higher than the rest.

Third.—A field of oats had a dressing of about a hundred pounds per acre on a part of it. When harvested, the weight of straw and grain was apparently doubled by such application. The grain has not been threshed, but the difference was too great to doubt the efficiency of the application. I have also witnessed the benefits conferred upon timothy and clover fields, by a large increase.

Maj. Farrington observed that he had formed the opinion that twenty-five dollars would be the price per ton delivered in Liverpool. Another valuable use can be made of this material—that for cupels for refining the precious metals. These have heretofore been made of bone-earth. Cups of it containing alloys or mixtures of silver and lead separate the silver from the lead. I have examined the mine at Crown Point—Prof. Emmons' discovery—and the effect of the phosphate on vegetation. I saw one tomato plant with all its fruit upon it weigning *one hundred pounds*, which was manured with that phosphate. Prof. Norton of Yale College speaks highly of this material. By proper exertion I believe that *fifty thousand tons of it* can be brought to market within the next year.

Prof. Mapes.—I have experimented with it on a small scale; that from Crown Point and that of Jersey. All are aware that previous to the use of bone in England the turnips were but indifferent, both in quality and quantity; now the crops are great and of fine quality. This phosphate (or as formed by the English Chemists, within the last twenty years, into a superphosphate of lime) is composed of three of lime to one of phosphoric acid, and is nearly indestructible by fire, therefore it is so admirably suited for cupellation. Bone in soil is slowly acted upon by plants and their roots, and the bone will remain a long time before it is consumed. The mineral phosphate by treatment with sulphuric acid is ready for immediate service to plants. The sulphate of lime is also useful to vegetation. We see clearly how we have used up the phosphate in our country. We once had 35 bushels of wheat per acre in Ohio, and 30 in New-York. Now it is 15 in Ohio, and 12½ in New-York. It has gone from us in grain and in the bones of the cattle brought to our sea-board. While by scientific management, the wheat of England has been brought up from 14 bushels the acre, as high (in some cases) as *fifty bushels per acre.* Every ox that has come to the sea-board from our western country, has brought away with him *one hundred pounds* of that indispensible phosphate in his bones. For feeding sheep, it has been decided that one bushel of turnips grown with bone, is worth two bushels grown with best barn-yard manure. Mr. Delafield's experiments have satisfied me of it. In the Jersey mine, there is some iron pyrites and some feld spar, the latter of which supplies potash. Even in the State of Massachusetts, (according to the report of the Hon. Mr. Wilder,) the crop of wheat had fallen off sixty thousand bushels last year, as compared with 10 years since, notwithstanding an increase of about one-third the number of acres planted, and a corresponding increase in the number of operators.

Plants prefer the super phosphate to the phosphate, as they more readily take it up. The soil holds fast the manure, there is no leading it downward, unless you place it in pure sand. The price of this article must not be so high as thirty-six cents per bushel. In Cincinnati, bone is far cheaper than that—notwithstanding the high price, a farmer will find it for his interest to pay a dollar, or even a dollar and thirty-six cents a bushel for it, rather than not have it in all his compost heaps. Hundreds of hogsheads of the burned bone used in sugar refining have gone to enrich the soil. That bone has been burned over and over, and there is no gelatine in it but that is easily obtained from the glue factories to be added to the burned bone dust. Mr. Scofield, of Morristown, N. J., has experimented with bone, and has raised 1,400 bushels of Ruta Baga turnips on one acre, and that too of superior quality, at a cost of not exceeding twenty-five dollars an acre. The manure was equal in point of real value to *one hundred and fifty loads of barn-yard manure*, so far as the phosphates are concerned. Clover, treated with it, has presented an enormous mass of vegetation, almost a solid mass.

Judge Van Wyck.—Phosphate of lime is certainly a very important ingredient in soils. A portion of it is necessary in all soils, for the healthful growth of all plants, and especially grasses and grains, upon which most animals live. Essential as it is for the vigorous growth and perfect maturing of plants, other mineral ingredients are also necessary, and a number of others. To spread phosphate of lime upon an acre of ground in an unreasonable quantity, because perhaps it may be the most essential, will not benefit the soil or plants an atom after going beyond a fair proportion, but, on the contrary, might be a positive injury, if done to the exclusion of other essential ingredients. Some organic or vegetable and animal manures to mix with the inorganic or mineral, especially if the soil is a lean one, are highly important for an abundant produce. It is pleasing to have the information confirmed to-day, which this club received some time ago, phosphate of lime, in any quantity and rich in quality, was to be obtained in two localities—one in the north part of this State, and the other in New-Jersey, and both convenient to water communication. It is of a mineral origin, and the mines, it has been stated, can be easily worked and the article got to market so as to be offered at a fair price—this last is undoubtedly essential to a liberal use of it. I do not believe there is such an impoverishment in soils in our country and such a falling off in their products, as many people suppose. In certain States or sections of these, it is much more considerable than in others. Take the whole nation, or two or three individual States, and examine the reports of the patent office at Washington—the most reliable source of information on the subject—and it will be found that the nation at large has gone on increasing rapidly in its products from year to year, or for terms of years, for perhaps fifty years, up to the present. Take 1839, about the first period when regular statistics were kept at this office of the regular agricultural products of the nation, one or two items will here be given as a sample of the whole: Wheat, in 1839—84,823,272 bushels; Indian Corn—377,531,875. In 1848, Wheat—126,364,600; Indian Corn—588,150,000. Take two or three individual States, and those about which most has been said as regards this impoverishment of soil and decline of its produce: New-York, in 1847, 14½ million of bushels of wheat; in 1848, 15½ million. Indian corn in 1847, 16 million bushels; in 1848, 17½ million. Massachusetts, in 1847, wheat, 256,000; 1848, 260,000; Indian corn, in 1847, 3,410,000; in 1848, 3,860,000. Ohio, 1847, wheat, 16,800,000; 1848, 20,000,000; Indian corn, 1847, 66,000,000; 1848, 70,000,000. Here is an increase up to the latest time we have returns, (for I have seen none later,) from the patent office, greater, considerably, in the new state of Ohio, than in the old states of New-York and Massachusetts; this was to have been expected. Ohio has been embraced in this estimate, as she is one of the states said to be on the decline in soil and products. Massachusetts never was a great state for wheat, from her earliest settlement; always excellent for corn and grass. When we speak of the nation, or a particular state, we mean the whole of either. In sections of Massachusetts good wheat, no doubt, has always been raised, and may be now with proper tillage; but these sections are small compared with the whole state, and the soil much better constituted by nature for wheat than the state at large. This happens every where, in most states and nations. Massachusetts has run much upon manufactures, for the last twenty-five or thirty years. She has drawn off a large proportion of her population into these, as being more profitable and less laborious than agriculture. If such is the fact, and we are inclined to believe it is, they will continue to employ their capital and labor in manufacturing establishments, as long as this state of things exists. No matter what may be said or done about the amelioration of soils, so as to cause an increased production, capital and labor will run in favor of that branch of industry by which the most money can be made, and in the easiest way. Farmers often change the raising of bread stuffs or particular kinds of it; some will not raise wheat at all, no matter how well their land will produce it, because it will not pay, or pays poorer than any thing else; and this is the case now, and has been for several years. Many buy their wheat flour. If they must have it, they say it is cheaper for them to do this, than to raise it to the exclusion of other things more profitable. Indian corn, oats, fruits, grazing, or the grasses, the dairy, breeding and fattening cattle, &c., these branches suit the soils of the Eastern States best, and they have been run upon much of late in this and other states south and west of us. Massachusetts consumed in 1847, 2,294,000 bushels of wheat more than she produced, corn 840,000 more. It is the interest of Massachusetts to supply this deficiency by buying of such of her sister states as will sell them to her cheapest and best, and pay for them in manufactures or the profits of these. If this were not the case, so large a portion of her population and capital would not be engaged in manufacturing establishments. Her Indian corn is not so largely deficient as her wheat, and by well directed efforts this deficiency might not only be met, but leave a considerable surplus, her soil being better fitted for corn. New-York and some other states, if they have fallen off in wheat as largely as some pretend, it is not owing so much to the impoverishment of their soils as their people's turning their attention to other branches of agriculture, as paying better than wheat, such a breadth of surface has not been planted with it. In the patent office reports, the number of acres are not put down, that I could find, it is only the amount or quantity of each state in the various agricultural products of the nation.

Prof. Mapes.—Mr. Van Wyck, forgets that these statistics of the patent office do not give us the product per acre. Allen, of Buffalo, stated, and he was responded to by Delafield and the committee of the State Society on crops, that the New-York yield of wheat per acre, on an average, was now but twelve bushels and a half.

The Professor introduced a number of gentlemen, delegates to the fair of the Horticultural Society of New-Jersey, 24th, 25th, 26th and 27th of September instant, who invited members of the Club and Institute to be present, at Jersey City.

Mr. Platt, of Brooklyn.—Gentlemen:—Having solicited the appointment of a committee on your part to visit our model Apiary, now in operation in Brooklyn, and having presented to you some specimens of honey made there, you will allow me to state some of the objects of Mr. Gilmore's invention, and the advantages claimed by him in the management of bees.

The object of his invention is the better and more successful employment of the industrious habits of the honey bee. This is effected, as in all other industrial enterprises, by multiplying the *hands*, giving them a full supply of the raw material, and so arranging the fixtures that the whole force of the operators may be directed and applied in the most economical manner, as it regards time and labor. It is evident to all that a saving of time is as important to the bee as to man. A bee that is not compelled to fly away to procure food and materials can do (other things being equal) much more in a day than a bee that has to range several miles in search of materials, and be subject besides to the casualties incident to the journey back and forth. The time spent by the one on the road is effectually employed by the other in storing up honey manufactured from the raw material supplied at the hive. You will ask how all this is done. The first thing necessary will be to prepare a house or room, say eight or ten feet wide and of any length required, in which the hives are to be arranged by placing as many as you wish on two shelves, one above the other, in such a manner as to unite them all perpendicularly and horizontally, thus enabling the bees to form one great and powerful community—to work together in perfect harmony, and thus to secure themselves from the attacks of robbing bees, and successfully to contend with their greatest enemy, the miller, at the same time doing away with the well known difficulties and objections to the principle of natural swarming in the open air.

In speaking of this subject, Dr. Scudmore, in his treatise upon bees, says:

There is no certainty as to the time when the expected rising of natural swarms will take place, by reason of several causes, some of which may prevent it altogether, and the inconvenience to which the proprietors are liable who do not form artificial swarms are consequently many:

1st. They are obliged to watch the departure of swarms very assiduously for six weeks, and sometimes much longer. Whatever attention may be given by persons entrusted with this care, many swarms fly away which it is impossible to arrest. Probably one-fourth of the best swarms are lost in this manner.

2d. He who has a small number of hives is obliged to watch them with the same assiduity as if he had more, and he who has a greater number is often much embarrassed, because it is no unusual thing to see several swarms go off at the same time. Some escape on the one side and some on the other, or unite themselves together.

3d. A cold and rainy time, which may happen at the moment when swarms are disposed to come forth, often prevents the bees from swarming; and further, swarms may issue at times when one wishes to be otherwise engaged; and, on the other hand, although the proprietor may be present, his swarms may settle in places where it is difficult to hive them. Now, it is easy to imagine, and still worse to experience, some of these difficulties. By the arrangement of the hives on Gilmore's plan, all such difficulties and objections are avoided.

The increase of the bees, which is very great, passing from the mother hive into new hives, by uniting them with the main body as before mentioned.

A principal feature of this mode of keeping bees is, that an unusually large number are attached to each hive, and, consequently, they are obliged to work in the adjoining boxes and jars; whereas, in the case of natural swarming, very often too many go away at once, and consequently leave but few or none to work in the boxes attached. The beauty, as well as utility of this invention, render the care of bees a pleasure and a profit, not only to the professed apiarist, but also to farmers and mechanics, and particularly to gentlemen of leisure, who may have a convenient spot on which to erect a bower of bees on this plan. The specimens of honey exhibited to you were made at our establishment, now in operation at Brooklyn, in which we have seventy-five hives and about one hundred and fifty ordinary swarms. The bees are stall-fed, the material costing three and-a-half cents per pound when prepared for use. We would state that, by thus feeding them, any sweet flavor and any desired color may be imparted to the honey.

The longest box of honey exhibited to you weighs thirty-one pounds, and was made in twenty days by one hive. We have another box from the same hive weighing thirty-five pounds, made in thirty days—this one hive yielding, in fifty days, sixty-six pounds of the purest and best of honey. This kind of honey is made in jars, or boxes, or tumblers, attached to each hive, after the hive proper has been filled with honey. As to the profits of feeding, our experiment at Brooklyn, although made under disadvantageous circumstances, is highly satisfactory. In consequence of unavoidable delays in the erection of the apiary building, the bees did not commence fairly their work before the first of June. The result, as nearly as can be ascertained, is as follows:

Honey in sections, allowing only one section to be taken away from each hive, viz.: one-third of the hive, 2,485 pounds, at sixteen cents per pound,	$377 60
Two hundred boxes and jars at $1.50 each,	300 00
Increase of bees,	225 00
	$902 60
Expense of feeding,	300 00
	$602 60

And yet this is made, as we have said, under very disadvantageous circumstances.

Thus, gentlemen, you have some idea of the advantages claimed by Mr. Gilmore in his bee arrangements. We hesitate not to say that the improvements about to be generally introduced in the management of bees is as far in advance of the old mode as railroad traveling is beyond the old style of stage-coach conveyance.

We trust that the investigations of your committee will show that we are justified in this expression of our opinion.

The honey presented by Messrs. Edwards & Platt, and that by Roswell L. Colt, of Paterson, by the hands of Mr. Frick, his gardener, were tried. Almost an equal division of opinion prevailed as to the several qualities. Both were excellent. The wholesale method of yielding a large crop of honey, of a perfectly uniform quality, by the Edwards & Platt method is admired, promising as it does to produce a popular supply of that delicious article. The wheat and dark oat sent to the Club by John N. Rose, Esq., of Crooked Lake, are remarkably fine. The oats yield 75 bushels per acre.

The subject of the mines of phosphate of lime ordered for continuation.

The Club then adjourned.

H. MEIGS, Secretary.

American Institute,
Farmers' Club, Sept. 16th, 1851.

Col. Lewis Morris, of Charleston, S. C., in the Chair, Henry Meigs, Secretary.

The Secretary read the following papers prepared by him, remarking the great advancement in chemical science, applied to useful purposes in the agricultural and other arts. Instance the recent fact of Dr. Stewart of Baltimore, prescribing ten dollars worth of phosphoric acid to the worn out land of the Hon. Reverdy Johnson—land which had refused to bear a bushel of corn an acre, although tilled as well as usual and in an ordinary season—by Dr. Stewart's dose, bore upwards of twenty-nine bushels of wheat an acre, the very next year, without any other manure whatever. This phosphoric acid being obtained by dissolving bones in diluted sulphuric acid, and then mixing with leached ashes for the purpose of sowing it broadcast. And, again, when the world feels the want of this bone-earth far and wide, Chemists discover it in mines!

CHEMISTRY.

It is from 1803 that the researches of Berzelius link themselves with all the main steps in the progress of the Chemistry of the present century. The era of modern chemistry may be said to have dawned when the oxygen of Lavoisier began to get the better of the phlogiston of Stahl, and the balance to be recognized as an indispensible instrument of research. It fairly commenced when the discoveries of Volta and Galvani not only made men acquainted with a new power which evidently influenced the chemical relation of bodies, but put into the hands of the experimenter a new and most effective instrument of investigation. In the successful hands of Davy this instrument soon after led to the most felicitous results.

In 1803 Berzelius published a paper on the decomposition of saline compounds by galvanism. Five years later, Davy, by the same agent, decomposed the alkalies; and while the world was ringing with this latter discovery, "I succeeded," says the Swedish Philosopher, "in going a step farther, and by the aid of quicksilver, decomposed the alkaline earths and ammonia, of which I informed Davy, who acknowledged, in his reply, that this reduction was previously unknown to him. Thus within twenty years were two revolutions made in chemical knowledge and theory, and each by the use of a new tool. The balance established the views of Lavoiser; the galvanic battery wrought the discoveries of Davy. These discoveries were the foundation of the electro-chemical theory, and became intimately connected with what is called the atomic theory, or the doctrine of definite, equivalent and multiple proportions. The study of the mutual and relative influences and re-actions of atoms or molecules, insensible in size and acting at insensible distances.

[From the Edinburgh Review, July, 1851.]

MODERN CHEMISTRY.

"Among familiar examples of slow poisoning is the disease known as the painter's colic. It is produced in lead mines and lead works by inhaling lead dust, and elsewhere, not unfrequently, by drinking water impregnated with lead. The metal being introduced into the system in a soluble form makes its way everywhere among the tissues, and lays the foundation of chronic and frequently returning pains. But diluted sulphuric acid, or sulphureted waters, like those of Harrowgate, render lead insoluble in water, whether in the body or out of it, and are therefore prescribed as common remedies for the painter's colic. Observation, meanwhile, has shown that these remedies, though they assuage or remove the symptoms of the disease, still leave the lead which caused it diffused in an inert state through the body, ready, when favorable conditions arise, again to act injuriously on the bodily health.

It is only the other day that M. Melsens, of Brussels, perfected this subdivision of chemical physiology, and gave us the means both of detecting the lurking presence of the metal in the system, and entirely expelling it as a cause of disease.

A substance, known in chemistry and pharmacy by the name of iodide of potassium, is capable of decomposing the insoluble compounds of lead, and of bringing the metal into a new condition, in which it readily dissolves in water. If a person be poisoned with lead his system struggles to throw it off; the metal makes its way through his kidneys, and can be detected in his urine. Cure him by sulphuric acid, or sulphuretted water, and with the pain the lead disappears from his urine, but remains in the system. Give him now a dose of iodide of potassium, and the pains of poisoning return, and lead re-appears in his water. A large dose will prostrate him with colic, but small doses, at frequent intervals will gradually wash away the metal without any sensible suffering.

So mercury, after long protracted salivation, lingers likewise long in the system, but the same chemical compound (iodide of potassium) washes it effectually out.

The precious color ultramarine, is now produced perfect and abundantly, by chemical processes, from the refuse of certain chemical manufactures. Chemistry analyzed ultramarine, and found its components abundant, and equal to that always hitherto obtained from the lapis lazuli at a great expense.

Thus we find constant advancement in the practical benefits of chemistry applied to the greatest of arts—agriculture, to almost all works of art, and to great improvements in medicine.

BEE.

This wonderful little animal has always fixed the admiration of the most observing and philosophic men in every age. Aristotle, who was well acquainted with much of the interesting history of the bee, (about 2,200 years ago,) was the first to observe that a bee, during each single excursion from the hive, limits her visits to *one species of flower*. Modern naturalists have confirmed the general accuracy of this statement, and noticed that the pollen with which a bee comes home laden *is always of the same color*. The necessity of this instinct arises out of the operation which the pollen first undergoes when collected by the bee. She rakes it out with incredible quickness, by means of the first pair of legs; then passes it to the middle pair, which transfer it to the hind legs, by which it is wrought up into little pellets. Now, if the pollen was taken indiscriminately from different flowers, it is probable that the grains, being heterogeneous, would not cohere so effectually. Certain it is, that bees enter the hive, some with yellow pellets, others with orange, pink, white, or even green colored ones; but they are never observed to be parti-colored.

Through this instinct another important end is gained, in relation to the impregnation of flowers; the production of hybrid plants by the application of the pollen of one species to the stigma of another is avoided, while those flowers are more effectually fertilized, which require the aid of insects for that purpose.

When a pollen laden bee arrives at the hive, she generally walk or stands upon the comb, beating her wings, and three or four of her fellow citizens assist in lightening her of her load; or the laden bee puts her two hind legs into a cell, and with the intermediate pair, or the extremity of the abdomen, brushes off the pellets. *These are then kneaded into a paste*, at the bottom of the cell, and several cells are thus filled with the packed and softened pollen, which is called bee bread.

Besides the honey and farina, bees also collect a peculiar substance like gum-resin, which was called "propolis" by Pliny; and this they obtain principally from the balsamic buds of the horse-chesnut, birch and poplar, especially the *Populus balsamifera*. The propolis is soft, red, and will pull out in a thread, and is aromatic. It is employed in the hive, not only in finishing the comb, but also in stopping up every chink or orifice by which cold, wet, or any enemy can enter. Like the pellets of pollen, it is carried on the posterior tibiæ, but the masses are lenticular.

The bees may be readily detected feeding the young maggot, which opens its lateral jaws to receive the bee-bread, and swallows it.

The queen lays six thousand eggs a month, according to Huber.

The formation of the wax is a very singular and complex operation. Huber says: "The wax-makers, having taken a due portion of honey or sugar, from either of which wax can be elaborated, suspend themselves to each other, the claws of the fore legs of the lowermost being attached to those of the hind pair of the uppermost, and form themselves into a cluster, the exterior layer of which looks like a kind of curtain. This cluster consists of a series of festoons, or garlands, which cross each other in all directions, and in which most of the bees turn their backs upon the observer. The curtain has no other motion than what it receives from the interior layers, the fluctuations of which are communicated to it. All this time the *nurse bees* preserve their wonted activity, and pursue their usual employments. The *wax makers* remain immovable for about twenty-four hours, during which period the formation of wax takes place, and thin laminæ (plates) of this material may be generally perceived under the abdomen. One of these bees is now seen to detach itself from one of the central garlands of the cluster, to make a way amongst its companions to the middle of the vault or top of the hive, and, by turning itself round, to form a kind of void in which it can move itself freely. It then suspends itself to the centre of the space which it has cleared, the diameter of which is about an inch. It next seizes one of the laminæ of wax with a pincer formed by the posterior metatarsus (instep) and tibia, and drawing it from beneath the abdominal segment, one of the anterior legs takes it with the claws and carries it to the mouth.

"The wax has, perhaps, the nearest analogy to the sebaceous (fatty) secretion of the integument than to any other animal secretion. It is formed beneath the scales on the under side of the abdomen, and when accumulated there seems to irritate the part, for the bee may then be observed wagging her abdomen and running round to and fro, as if endeavoring to shake out the little scales; and she is generally followed by one or two other bees, which have been attracted by her movements, and are ready to seize upon the plates of wax as they fall. How they mould the scales into the walls of their cells is not yet exactly understood. Some have supposed that they bite pieces off and join them together, but the smooth and uniform surface of the cell shows that other operations must take place; besides, the wall of the cell is sometimes thicker than a scale of wax. We must, therefore, suppose that the bees have the power of applying some dissolving or softening menstruum to the wax scales, by which they are enabled to knead and blend them into a ductile paste.

Huber says that the bee holds the lamina of wax with its claws vertically—the tongue rolled up serving for a support—and by elevating or depressing it at will, causes the whole of its circumference to be exposed to the action of the mandible, so that the margin is soon gnawed into pieces, which drop, as they are detached, into the double cavity, bordered with hairs of the mandibles. These fragments, pressed by others nearly separated, fall on one side of the mouth, and issue from it in the form of a very narrow riband. They are then presented to the tongue, which impregnates them with a frothy liquor. During this operation, the tongue assumes all sorts of forms; sometimes it is flattened like a spatula; then like a trowel, which applies itself to the riband of wax; at other times it resembles a pencil terminating in a point. After having moistened the whole of the riband, the tongue pushes it so as to make it re-enter the mandibles, but in an opposite direction, where it is worked up anew. The liquor, mixed with the wax, communicates to it a whiteness and opacity which it had not before, and doubtless gives it that tenacity which it possesses in its perfect state. Bees have large and complex organs of sight, and always take the shortest road to their object. The bee does not take honey indiscriminately from every flower. In the meadows they are chiefly seen upon the orchideæ, polygonia, caryophylacea, but seldom, if ever, upon the ranunculaceæ, perhaps on account of some poisonous matter in the latter. The oleander, which yields poisonous honey fatal to thousands of flies, is carefully avoided by bees; and the crown imperial, the white nectaries of which are so conspicuous, tempts, but in vain, the passing bee.

The finest flavored and most delicate honey is collected from aromatic plants. Those flowers which have a nectar not hurtful to bees, but poisonous to man, are sometimes visited by bees. The description by Xenophon of the intoxicating or maddening honey which so violently affected a number of the ten thousand Greek soldiers in his celebrated retreat, has been confirmed by Tournefort and by Dr. Barton, who, in his account of the poisoned honey collected from the Kalmia latifolia (so called from the traveller Kalm, who remarked it in North America. It is a beautiful plant, flower of single petals, white or pink, and leaves evergreen, said to be deleterious) by the bees in Pennsylvania, justly observes, that there is more of poetry than philosophy in the following lines of Pope:

> "In the nice bee what sense so subtly true,
> From poisonous herbs extracts the healing dew."

Economy in the expenditure of wax is very important for the bee, on account of its costly manufacture. They accordingly construct their cells of the smallest quantity—giving the hexagonal, (six sides) form to it, because that form makes with the smallest material, the largest reservoir that can be made, and the most profound mathematicians and most skillful geometers have solved the problem relating to the attainment of the preceding objects, as derived from the infinitessimal calculus, to have a surprising agreement with the actual measure of the different angles formed by the walls of the cell.

The true honey bee (apis mellifica) was originally of the Old World, whence it was transported to America and other countries, where European colonies are established.

Latreille, the distinguished entomologist says, in his Regne Animal (Animal Kingdom,) that the honey bee of the south and east of Europe, as well as of Egypt, differs specifically from that of western Europe.

Hunter's observations on the temperature of bee hives are interesting. He found the warmth inside a hive at eighty-two degrees, while the air outside was fifty-four degrees: this was in July. And in December, when the air outside was thirty-five degrees, that inside was seventy-three degrees. And thus, what is extremely rare in the lower animals, they maintain their digestive powers, and subsist on the produce of the summer and autumn. Accordingly, they are always ready to take advantage of any fine mild day—go abroad and enjoy the weather—and while abroad, always void their excrement, for they are singularly clean in all their habits; and when purposely confined to the hive, with abundance of food, they have been known to fall a sacrifice to their instinctive repugnance to defile the hive.

General Chandler presented ears of wheat from A. H. Ernst, Esq., of Cincinnati, Ohio, for distribution, the production of a sample obtained from England. Mr. Ernst states that he has found it exceedingly productive and hardy, much more so than several other varieties under the same treatment and in the same soil. It is of recent introduction into England, and is attracting much attention there. Its reported product is one-third more than the best varieties in use.

Dr. Pennell, of Oswego, near Lake Ontario, presented a tobacco plant, with its seed-balls nearly ripe. The largest leaves measure about two feet in length by about one foot of greatest breadth. The whole plant is almost six feet high, and it bears about one hundred and fifty seed-balls.

The Chairman observed that smaller plants than this were preferred.

Judge Van Wyck.—Will the best Cuba tobacco grow here?

Chairman.—I think not.

The Secretary mentioned the large crop of dark colored oats of Mr. Rose, of Crooked Lake, seventy-five bushels an acre; a specimen sent to the Fair.

Chairman.—I have tried northern oats on my Carolina farm, but they do not thrive. The southern oat gives a heavier yield, much. I tilled it well, planted it in drills, and ploughed between them with a bull-tongued plough. I got forty bushels per acre; the season was admirable for it. It is often adverse to oats with us. I have often had poor oats on my Westchester farm. I saw fine fields of it lately in Canada; there are beautiful level lands loaded with various crops. I was surprised at their beauty.

Dr. Austin Church. On the subject of the newly discovered mines of phosphate of lime. I observe that very high importance is justly ascribed to it. But its value to the farmers is very dependent on its price. If they ask for their mineral twenty-five dollars a ton, they will prevent any large benefit being derived by farmers. Why, sir! bones are now sold at about ten to thirteen dollars a ton. Our hard coal (Anthracite,) ashes contain all of four per cent. per ton of the same phosphoric. Before using them they should be exposed to the air for some time. Urine contains the largest share of it of any barn-yard manure, and this is to a great degree lost for want of proper care.

Dr. Underhill, of Croton Point, said that barn-yards were generally (nine out of ten) badly constructed, they lose one-half of the urine.

Dr. Church.—Add common salt to manure, and with the ammonia, it will form muriate of ammonia, thus fixing that volatile substance, and when applied to the soil aiding the growth of plants, preventing the evaporation of the ammonia.

Dr. Underhill.—That is right. Ammonia, always in the air, comes down in the rain, colors it yellow. Charcoal takes the ammonia out of the rain water and leaves it clear. Snow brings down ammonia abundantly. Late snows in the spring on grain are well-known fertilizers.

Col. Morris was obliged, by business to leave the chair, which was, on motion, taken by Dr. Underhill.

Dr. Church.—It seems to resemble, in effect, the practice called mulching or covering; covered spots favor the collection of nitre.

Dr. Underhill.—Where snow lies deep and long, much ammonia is collected. In valleys watered by streams of melted snow, the goitre is very prevalent; this swelling of the glands of the throat may be owing to the quantity of ammonia in the water.

Dr. Church.—The experience of Dr. Coventry in the goitre, caused him to refer it to the use of the water of a spring containing alum. Idiocy is a common effect of goitre.

Dr. Underhill.—It produces a diminished intellect—a stupor. Cases of goitre are very rare in this country.

Judge Van Wyck.—Idiocy is common with goitre.

Dr. Underhill.—Chemistry has demonstrated the large proportion of the phosphate of lime in wheat. We have been for 150 years taking this element away from our soil. We have not returned it. We have sent off to other countries millions on millions of this phosphate in wheat, corn, pork, beef, &c. We have also exported very large amounts of bones to Europe. Fifteen or twenty years ago, farmers hereabout quitted growing wheat. They thought that owing to some malaria or to something else, the fly, &c., wheat would no longer give fair crops; they knew nothing of this phosphate of lime. Long Island made use of large masses of fish, called Manhaden, or Moss Bunkers, for manure. They put them on or near the surface. The odor from them was excessive, and even pernicious to health—occasioning in cases, the prevalence of locked jaw. Now, the old notion that all the manure leached down caused all this trouble and an immense loss of the fertilizing properties by this evaporation and escape into the air. If they had put the fish down deep all this would have been saved. But, nevertheless, they got one crop by it of sometimes fifty bushels of wheat an acre. As soon as our farmers applied bones all the wonderful malaria disappeared. The supply of moss bunkers is unlimited.

Dr. Church.—And cheap too, for they are often sold on the beach for ten shillings a wagon load.

Dr. Underhill.—We do now return to the country from our city a considerable amount of the fertilizers. Guano is a concentrated manure made of fish. The use of it is not well known generally. I have injured plants by using guano too strong. It must be well diluted; my workmen would not at first obey my instructions on that point. That the newly discovered mines of phosphate will prove of vast importance is certain, and it is probable that other mines of it will ere long be found. But, undoubtedly our farmers ought to be furnished with it at a cheap rate, to make it a blessing.

Mr. Van Wyck.—Professor Johnston in his book of travels in North America, speaks of these mines of phosphate of lime both in Canada and the northern part of New-York, imbedded "in the shape of metamorphic limestone, unusually rich in phosphate of lime." The professor in his book states the conversation he had with a practical farmer of Syracuse, in Western New-York, who said, "if a farmer hires two men, and works with them, and keeps them at their work, he may maintain his family and clear 8 per cent. upon the value of his farm. But if he farms more largely, as a gentleman farmer, leaving the management to an overseer, he will not make more, perhaps, than 2 or 3 per cent. Farming is much less profitable in the county of Onondaga than it used to be four or five years ago. Our land still grows 50 bushels of Indian corn to the acre, and this is the best crop we now get, but it must be manured; much is now laid down to grass to be recruited." This is the substance of what I have stated before in this Club more than once, that wheat will not pay as well as Indian corn and grass. It will not pay for highly manuring and tillage equal to some other things This is the true reason why the crop of wheat has fallen off, with us and in some other States; there is not so much planted, or if there is as much, or even more, it is not manured as high or tilled as well as some other things. The farmer cannot afford to put phosphate of lime and other mineral ingredients, which his soil may require, and also a good supply of barn-yard manure and the best of tillage besides. All these must be and are applied at this time to things that will produce more and pay better than wheat.

Dr. Underhill. I omitted speaking of another great source of phosphate of lime, and that is one which some few farmers have hit upon. I mean that part of the farm which lies about six inches deep under the farm. There, since the deluge, lies undisturbed the fertilizer, usually hard.

Roots of the grains and annuals cannot penetrate it. There it is and has been accumulating for thousands of years, insoluble, except when roots apply themselves to it. Not one farmer in ten ever plows deeper than five inches. The roots cannot get at the mine below—it is too hard. He cannot afford to buy guano or bone, but he can afford a subsoil plough. Let him go down fifteen inches into his good farm below, and he may have a new farm good for fifteen years to come. I never thought until this year, that my loose, sandy, gravelly land wanted subsoiling! It is so very light and loose that one almost wades in it. But, nevertheless, this year I have subsoiled 12 to 14 inches deep, and my corn on that tillage has given me a *double crop.* I found the bottom of my very loose top soil hard packed; the annual plants could not put their roots through it. My double crop has succeeded in spite of a pretty severe drought. I have for many years always ploughed to the depth of from eight to ten inches, but this season I have resorted to *the farm which lies under mine* successfully.

Dr. Church.—Is it necessary to subsoil every year?

Dr. Underhill.—I think not; but I mean to subsoil every acre I cultivate. It operates, also, as a drainer. It also receives the fertilizer from the atmosphere. *The first store of manure is our earth; the second one is our atmosphere.* That from the latter enters the earth by means of dew and rains—by dew even in times of drought—when a deep-tilled soil can take it in, while a shallow one cannot. Up to this day the shallow work prevails. Nineteen out of twenty farms are so abused. A farmer who can neither buy books nor attend Farmers' Clubs, can nevertheless plough deep. Let him try it, and if he fails, let him come to this Club and tell us so?

The subject—Phosphate of Lime—was ordered to be continued.

The Club then (on account of the 24th Annual Fair,) adjourned to the first Tuesday of November next.

H. MEIGS, *Secretary.*

AMERICAN INSTITUTE,
Farmers' Club, Nov. 11, 1851.

George Dickey, Esq., in the Chair; Henry Meigs, Secretary.

Professor Mapes—The phosphate of lime has been long used in England, and many thousands of bones are imported into that country for the use of farmers; the value of these bones is due to the phosphate of lime they contain—even the field of Waterloo was rendered an accessory for furnishing this amendment.

Until a late date the only source from which phosphate of lime was obtained was from bones ground and applied to the soil.

The first improvement in their use consisted in fermenting them with a divisor before use, so as to render them more easily soluble for the use of plants; other operators boiled bones in a close vessel, under pressure of steam, and with very high pressure they are soluble in water, and may be added to the compost heap in semi-fluid form—all the gelatine dissolving and the phosphate of lime dividing readily through the fluid. The more recent improvement, however, is changing the phosphate into the *super-phosphate of lime*, and thus rendering it soluble in water, so that it may be applied to the soil either in the fluid form or through the compost heap.

This change is produced by treating bones with dilute sulphuric acid. The phosphate of lime is composed of phosphoric acid and lime, and is not soluble in water, but when treated with sulphuric acid a combination takes place between the lime and the sulphuric acid, converting part of the lime into sulphate of lime, (plaster of paris) and leaving all the phosphoric acid combined with part of the lime as *super-phosphate of lime* which is soluble in water and therefore is immediately absorbed by the roots ot plants.

When phosphate of lime is applied to soils fifty bushels per acre is required, and its effects last for many years, and thus the capital of the farmer is put out at compound interest, which he pays himself. If the *super-phosphate of lime* be used, the amount resulting from five bushels of bones is sufficient for an acre, and the effect is much greater than when ground bones alone are used. By this treatment the amount invested is readily realised at an early date, and if a larger quantity be applied, as it is not volatile, it cannot be lost but remains in the soil until the requirements of plants consume it.

For this purpose the mercantile sulphuric acid should not used, that obtained from the chamber of the manufactures, before concentration, known as *chamber-acid*, is much cheaper and equally effective. The great expense of sulphuric acid is in its concentration, and as it requires to be diluted before use by the farmer, it should be purchased before the expense of concentration has occurred.

Digitized

The chamber-acid should be diluted with its bulk of water before being applied to bones or other phosphate of lime.

Within a few months two large deposits of native bone-earth have been discovered in this country—the one at Dover, New-Jersey, by Dr. Jackson and Francis Alger, Esq., of Boston; and the other at Crown Point, Lake Champlain, by Prof. Emmons.

That, in the New-Jersey locality is very pure and compact, it being twice the weight of bone-dust and containing an equally large per centage of phosphate of lime. When pulverized it dissolves readily in sulphuric acid, forming the super-phosphate, and will prove of inestimable value to our farmers. A company has been chartered by the Legislature of New-Jersey for working this mine, and many hundred tons have been shipped to England, and there bought readily by the farmers at from £5 to £7 per ton, ($25 to $35,) while our own farmers, with but few exceptions, are inactive in its use.

Many thousands of acres in the States of New-York, Massachusetts, Ohio, and elsewhere which produced large crops a few years since, now refuse to do so, and in many cases simply from absence of phosphoric acid in the soil, the whole having been parted with as constituents of former crops, and composing the bones of animals raised upon these farms. Experiment has proved that turnips and other crops raised on soils fairly charged with phosphate of lime, are more nutritious and have better keeping qualities than those raised by the use of farm-yard manure alone; indeed, the nitrogenous manures are always more effective after the application of super-phosphate of lime. I have many acres of ruta-bagas this year raised as a second crop, after early vegetables, by the use of super-phosphate of lime, and yielding more than one thousand bushels per acre. All the root crops are doubled in quantity by its use, while all other crops are materially improved. By reference to the analysis of vegetables, but few will be found the ashes of which do not contain phosphate of lime, and maximum crops cannot be raised from soils deficient in this amendment. To the dairyman, this manure is highly important; milk contains large quantities of phosphate of lime, and pastures are doubled in value for the use of milch cows by its use.

The chairman remarked that the English have for a long time past used for manure all the bones they were able to obtain, and with great advantage to their crops.

Judge Van Wyck. All soils are more or less furnished with the phosphoric element which the bone supplies, when exhausted by vegetables, it must be restored.

Mr. Van Wyck said that the phosphate of lime that had been discovered here, in both localities, that of Dover in New-Jersey, and Crown Point in the north of this State, were held too high for the English market. This he learned from some of the latest periodicals, and the discussions there contained on the subject, which took place in the London Farmers' Club. It was said there, the American phosphate, on investigation, was certainly not worth more than the English. This last contained from 45 to 50 per cent, of pure phosphate, and a good deal not so much; that this, in its raw or rough state, would not bring £5 a ton; of course so much, or certainly not more, could be given for the American. The trade was then considered as closed. Those who had the American article for sale, to show their courage on the occasion, immediately raised it up to £7. This, as may be supposed, stopped the sale for that time. All or most articles of commerce here, that are the growth and manufacture of our country, are apt to be valued higher here than in Europe, or than they will bring on being sent there. This probably is owing to thé high price of labor here, and the article, perhaps, cannot be afforded for less than it is held at here. Phosphate of lime in England is to be found in quite extensive sections there, imbedded in lime stone and some other rocks, called *coprolites*, meaning petrified dung of certain animals of the lizard tribe, monsters in size as well as appearance, and are supposed to have lived before the deluge. This gives it animal properties, and makes it more valuable. It is also found there in certain green sands, worked up, it is thought, from the sea to some distance in the interior, in ages back, and incorporated with sea animals and other marine substances; some of both kinds are said to be rich in phosphate. May not some of the rocks in New-Jersey, in which this mineral has been found, have a similar origin to the English, that of *coprolites*, or may not some of the green sands found on the sea coast there, and extending far south, be rich also in this valuable mineral? I do not think, as I have stated before in this club, that land requires more than a certain quantity of this good article, and to apply it beyond this would be useless expense—say from 100 to 250 lb. per acre, according to the quality, as Professor Mapes has said, land generally will probably receive and profit by more of this than any other mineral, such as lime, gypsum, &c., The purest state in which it is to be found is, we believe, bone. This contains considerable animal matter, and, if broken, ground, or dissolved in sulphuric acid, all is preserved.

Mr. Meigs had observed, with great pleasure, that in the State of Wisconsin, a flax pulling machine had been invented, which can pull twenty acres of flax in one day. This is an immense relief to the flax grower, for this operation was always hard work—hardly ever done at a less cost than four dollars an acre. This invention will be of far greater value to the flax crop than Mr. McCormick's reaper is to that of wheat. Information can be had of S. B. Goss, of Janesville, Wisconsin.

NEW-YORK, 10th Nov., 1851.

To the Chairman of the Farmer's Club:

In a letter dated the 3d February last, addressed to my relative, Mr. Hooper, Theydon Hall, Essex, England, and published in the Transactions of the American Institute, page 398, under date of the 15th February, 1851, I stated a new process of growing wheat, without ploughing or spading the land. I requested him to make a personal examination of all the interesting points of the subject, and to inform me by letter, for publication. His reply is received, and contains such a satisfactory and corroborative evidence of the truth of the former statement, that the reader, if inquiring, like myself, for practical facts and realities, will be well repaid by investigating them in juxta position, and whilst reading the first, refer for confirmation to the second.

Q. In what condition was the land, how cropped and manured in the three last years preceding the experiment?

A. Cropped with potatoes, 18 years of the 20 years preceding the experiment.

Q. What area is thus used?

A. Two acres, containing 43,000 feet each.

Q. What is the surface soil, as sand, clay, loam, gravel, &c.?

A. Brown loam.

Q. What is the subsoil?

A. Brick earth.

Q. Is the land plain or in stetches (ridges,) or lands; and of what size?

Unanswered.

Q. How many grains dropped in each hole, and how deep?

A. Three or four grains; about two inches deep, taking 1½ peck per acre.

Q. What kind of wheat?

Unanswered.

Q. When is the land seeded?

A. Early in October.

Q. Are we to understand the dibbling as distant one foot between the rows, and also along each row, i. e., one foot square?

A. The distance between the rows is one foot, and between the holes in each row three or four inches.

Unasked.

A. Annually manured with 30 or 60 bushels of coal soot per acre, in March or April.

The grower, Mr. J. D. Piper, of Colne Engine, near Colchester, England, has now grown on this same piece of land seven successive crops of wheat, without on any occasion, allowing a plow to turn over a single furrow. The soil, in fact, has not been disturbed by plough, spade, or any other implement; the only thing used has been a hoe, and this has not been employed to loosen the soil; but only to remove the surface weeds to burn them with the stubble. The average produce of the first six years has been forty-two bushels per acre, and of the last year forty bushels per acre. A horse hoe, or cultivator, or broad share plough, might supercede the general use of the hand hoe, especially when preparing the land for seed. Phosphate of lime, or guano, or dry wood ashes, or salt petre, might (I suppose) be substituted for the soot occasionally.

A horse dibbling machine, during the last six years, has planted three acres per diem, at nine inches square, and I presume might be substituted for the expensive hand dibble.

The seed wheat should invariably be prepared by brining and liming; or by blue vitriol, a more recent practice, more suitable for machinery; but both are preventives of smut, and never, no never submit to its attack.

I give the latter method—To six quarts boiling water add one pound sulphate of copperas or blue vitriol; put three bushels of wheat into a shallow tub, and when the vitriol is quite dissolved, add the compound to the wheat, intermixing them thoroughly.

HISTORY OF BOTANY.

[From Lindley's Vegetable Kingdom.]

From the beginning, man has been forming names for plants. Botanists have gathered together, have studied and arranged upwards of 82,000 species of plants, a mighty host whose ranks are daily swelled by new recruits. This vast assemblage has not been gathered together in a few years, it is coeval with man, and we cannot but feel that the study of the distinction between one plant and another commenced with the first day of the creation of the human race. The name Botany is modern, but its antiquity dates from the appearance of our first parents. The classes first stated were "grass, and herbs yielding seed. and fruit trees yielding fruit." Theophrastus (about 2000 years ago) had his water plants and parasites, pot herbs and forest trees, and corn plants. Dioscorides had aromatics, gum-bearing plants, eatable vegetables and corn herbs, and the successors, imitators, and copiers of those writers, retained the same kind of arrangement for ages. It was not until 1570 that Lobel, a Fleming, improved the ancient modes of distinction. He was soon followed by others, among whom the most distinguished were Cæsalpinus, an Italian, who wrote in 1583, the celebrated Tournefort, and especially our countryman John Ray, who flourished in the end of the seventeenth century. He had so clear and philosophical a conception of the true principles of classification as to have left behind him in his Historia Plantarum (History of Plants) the real foundations of all those modern views, which having again been brought forward at a more favorable time by Jussieu, are generally ascribed exclusively to that more learned Botanist and his successors. Ray, however, labored under the great disadvantage of being too far in advance of his cotemporaries, who were unable to appreciate the importance of his views, or the fitness of his opinions; and who, therefore, instead of occupying themselves with the improvements of his system, set themselves to work to discover some artificial method of arrangement that should be to Botany what the alphabet is to language—a key, by which the details of the science may be readily ascertained. With this in view, Rivinus invented, in 1690, a system depending on the formation of the Corolla, (Flower;) Kamel, in 1693, upon the fruit alone; Magnol, in 1720, on the Caly, (the outside covering of a flower) and Corolla; and finally Linnæus, in 1731, on variations between the stamen (the male organ,) standing around the centre of the flower, and the pistil (female organ) standing in the centre. This method has enjoyed a degree of celebrity which has rarely fallen to the lot of human contrivances, chiefly on account of its simplicity and clearness, and in its day it effected a large amount of good. Lindley calls his system the natural one. The work is in one thick octavo volume of 908 pages, containing numerous drawings of plants and parts of plants.

Addington D. Frye, being requested by the chairman to exhibit to the Club some of his specimens of Algæ (sea weed,) presented a number of them prepared by himself, firmly placed on drawing paper with perfect neatness and full and perfect form. They were selected by Mr. Frye in the Pacific ocean, within the last three years, from Panama to San Francisco. Mr. F. is now engaged in a classification and nomenclature for them; his object is to make as entire a collection of them as is possible. While Mr. F. was explaining the beautiful specimens, he mentioned, among others, the lofty Algæ, which rise from 100 to 150 feet from the bottom of the sea in some places and entangle the vessels sailing through them, embarrassing the paddle wheels of steamers. He adverted to the practical uses to which some of them may be put, over and above their uses as kelp. Some of them can be cooked as jelly, and it may be considered as good as calves' foot jelly. The colors of some are splendid.

The Secretary read from Lindley's Vegetable Kingdom the following extracts:

Lindley, in his Vegetable Kingdom, makes the following re marks on vegetable and animal life:

"And hence it is that those who deal in generals only, without descending to particulars, pronounce with a voice of authority that the animal and vegetable kingdoms are sundered by decided characteristics. The Zoologist declares that the power of spontaneous motion, and the feeding by a stomach, are qualities confined to the animal kingdom. But numerous plants move with all the appearance of spontaneity; the spores of those confervæ, which are sometimes called zoospores, swim in water with great activity; the filaments of the zygnemata (one of the Algæ sea weeds,) combine with the energy of animal life; and as for a stomach, it is impossible to say that the whole interior of a living independent cell is not a stomach. Chemists once referred to the presence of nitrogen as a certain characteristic of animals. But plants abound in nitrogen. With more reason they now appeal to the existence of starch in plants, an organic compound unknown among the animal creation. And this is perhaps the best mark of distinction that has hitherto been found; for it is universally present in plants, and has enabled Mr. Payen to confirm by chemical evidence the vegetable nature of certain productions till lately regarded as zoophytes, and therefore as belonging to the animal kingdom.

But it has been long ago asserted by Bory de St. Vincent, and others, that there exist in nature organized bodies which are animal at one period of their lives and vegetable at another. This if true, would forever put an end to the possibility of distinguishing the two kingdoms, when they shall each have arrived at their lowest forms. Its truth, has, however, never been denied. On the contrary, Kutzing, in his recent magnificent work of Algæ, insists that it happens in his Ulothrix Zonata. He asserts that in the cells of that plant there are found minute animalcules, with a red eye point and at ransparent mouth place; that they are not in fact, distinguishable from Ehrenberg's Microglena monadina; these bodies are, however, animal only for a time. At last they grow into vegetable threads, the lower joint of which still exhibits the red eye-point. This phenomenon, which Kutzing assures us he has ascertained beyond all possibility of doubt, put an end to the question whether animals and plants can be distinguished at the limits of their two kingdoms. It is in this microscopic cellular state of existence that the animal kingdom ends and the vegetable commences.

While the members of the Club were examining the specimens, the Secretary read from Lindley's Vegetable Kingdom further, as follows:—"It is not easy to settle the limits of the alliances of *Thallogen*, [that is the class Fungus and Lichens (or moss.)] Linnæus and Jussieu made but two divisions—Fungi and Algæ—and they have been followed by some modern botanists, particularly Fries and Wahlenberg. In what way those forms can be best defined, is a very difficult question. It has been said that Algœ are aquatics, while Lichens and Fungi are terrestrial; but Fungi will develope in water, when they assume the farm of Algæ. Lichens have been characterized by thei shields or reproductive disks containing spores, lying in the fusiform spore cases called Asci."

Mr. Frye remarked that, so far as he had experimented, some of the colors of Algæ—one of them of a madder tint, nearly—have gained in brilliancy by being subjected to soap, soda, ammonia, and steam of 2500 Fahrenheit.

The Secretary.—The Club will recollect that the Tyrian dye, so famed in ancient times, used to give the imperial purple of Babylon and Rome—was derived from a shell-fish called Murex, on the coasts of Syria. That color was celebrated not only on account of its great beauty, but because it was indelible.

The purple Iodine of our modern chemistry, is obtained from Algæ. This article is deemed indispensible in Daguerreotyping. What connection is there, if any, between the Tyrian purple and this Iodine.

THE JERSEY PHOSPHATE OF LIME.

Prof. Mapes.—The company have orders for any quantity of the native bone-earth, which they can supply at five pounds sterling a ton, but they have raised their price to seven pounds a ton, and that has, for the present, closed the sale of it in England.

The Secretary asked Dr. Antisell, what is the specific gravity of bone-earth? water being sixty pounds the cubic foot.

Dr. Antisell. It is three. One bushel of it is equal in weight to four bushels of bone dust.

Prof. Mapes—observed that as cartage on farms is a very common expense, much is thus saved in the article of bone earth as to bulk and weight. One wagon can carry at once enough of it for many acres; and almost every farm requires more or less of it as an amendment to their soils.

Dr. Antisell.—Green sand, similar to that of New-Jersey, is found in England, but all the phosphoric part of it is deemed to be due to the Coprolites, (the excrements of the monster lizards of the early ages,) with which the green sand is connected in site. In the green sands of New-Jersey, I have not yet found on analysis more than five and a-half per cent. of phosphate, and commonly much less, even as low as one per cent. It should be in every soil or the manure to be put on it. Pusey took out a patent for his artificial manure several years ago; his plan failed. Liebig and others have been tried. We are thrown back much upon the old barn-yard manure system. By following, which it is known that the important element nitrogen is acquired by the soils.

Prof. Mapes.—As a general rule it is true that soil has mineral manure enough; barn-yard manure cannot supply all that is wanted.

Prof. Mapes proposed as the next subject, "The relative value of mineral manures, and Algæ."

The Club adjourned to next Tuesday.

H. Meigs, *Secretary.*

American Institute,
Farmers' Club, November 18, 1851.

Rev. Joseph Carter in the chair; Henry Meigs, Secretary.

Professor Mapes.—I proposed the subject for this day—the relative value of mineral manures. The importance of these in connection with the barn yard manures, cannot be rated too high. Soils become exhausted of some of the minerals as well as the organics. Science readily settles the question as to what mineral (inorganic) substance is absent from the soil, and how much it is necessary to add. Liebig has been unjustly reproached. When he began his investigations, he soon discovered, on examining the constituents of plants, the necessary proportions of the inorganic elements. He found that in the ashes of all plants were the inorganic parts that belong to the earth, and the organic, which properly referred to the atmosphere; that the latter constitute about nine-tenths of the substance of plants. By decay, by distillation, by fermention, &c., the organics find their way to their atmospheric home. He manufactured manure, and sent it to England, without a sufficient regard to the great difference of climate between his country and England; consequently it failed. Had he added to his manure the proper amount of nitrogen, he would have succeeded in England. The barn-yard manure, which always contains it, should be added to the mineral compound. No two farms are exactly alike in their constitution. One wants what another has sometimes too much of. This variation may be acre by acre. Many have said that a bottom heat must be had for mineral manures. Dr. Johnston has said so. No doubt exists of the necessity of nitrogen, and that is furnished by the mucous and oleaginous parts of barn-yard manure; these stimulate the growth of plants. Common sea sand will, with the proper additions, grow plants as well as the richest soils. Liebig used the term eremacausis to explain the slow process of combustion by which plants lose their form and fall to decay. This carbonization produces a dark color, as in pure carbon, (charcoal is a solid example of it,) this carbon, being by this eremacausis finely divided, becomes a coat for every grain of sand, giving, where it abounds, a black tint to soils. Carbon takes up nitrogen and keeps it until plants want it, and then they take it up. The marls of Monmouth county, in New-Jersey, are readily applied to that sandy soil, and render them fertile; but without it those lands are valueless. Still the marls must not be applied over much. Lime is known to injure soils when there is too much of it. So people talk of their lands being tired of lime; they ought to say, rather, that they want the organic manures. In truth, on every farm there must be a proper meeting of the organic with the inorganic elements. On my experimental farm I have so arranged all these manures, and I have raised on some acres prepared for the purpose more than a thousand bushels an acre of extra solid, well keeping Ruta Baga turnips. I repeat it, Dr. Liebig was not fairly treated in England. He first gave the world the key to the true system of scientific agriculture. The approximations to his discovery were mere dreams; it was never perfected except by Liebig. Those approximations were mere badinage. The English chemists have not been fair with him, for he was right as to his own country—faultless; but in England, and probably in some other countries, his plan requires some alteration. He commences by saying that carbon cannot be destroyed. I should give up my farm if I were to quit the inorganic manures.

BURLINGTON, N. J., 17*th October*, 1851.

FARMERS' CLUB, AMERICAN INSTITUTE:

Gentlemen,—At a recent meeting of your Club the wish was expressed that farmers would make known any case in which subsoil ploughing failed to prove beneficial. As such has been my experience in every case in which I have tried it I send you the following details in compliance with that request.

My first experiments were in 1844, and I extract the following account of them from vol. 2d, (new series) of the Cultivator, page 102, which account I furnished to that journal at the time. "I procured a subsoil plough last spring and used it on three different crops, viz: corn, potatoes and barley. The corn was planted on a light, sandy loam, the potatoes on a rich loam inclining to be clayey, and the barley on a rich mellow loam. One-half of each field was subsoiled to the depth of eight inches (below the bottom of the furrow,) the other half having only an ordinary ploughing. There was no perceptible difference in the appearance of either of the crops during the season of growth, and as the difference at harvesting, if any, was not enough for us to discover it by careful observation and comparison of different parts of the field, I did not think it worth while to make an accurate measure of the whole of each division.

I made no farther use of the subsoil plough till last year, and was then induced to try it again because the theory of the benefits derivable from it seemed to me so rational that I could hardly believe I had not been misled by my own experience. I then tried it on different soils, on which were cultivated tomatoes, beets, melons, cabbages, potatoes and early white corn, all of which I grow largely for the Philadelphia market. With most careful observation I could perceive no difference in any one of the crops, between that part which was subsoiled and that which was not, except in the field of corn. This contained about two acres on a side hill having a south west aspect and a warm, sandy soil. The whole field was heavily manured broadcast and ploughed as soon as possible after manuring, and one-half of it was subsoiled fifteen inches below the surface. I carefully staked the line of division and labelled the stakes, that there need be no mistake as to which side was subsoiled. A little manure was put in each hill at the time of planting. Before the corn had attained half its growth the part which had not been subsoiled showed a decided gain on the other, and throughout the season it maintained it so that the difference in the appearance of the corn could be seen at a distance, and when cutting it for market the product of the part which had not been subsoiled was about one-third greater than the other. As last year was a wet year, I determined on another trial, and accordingly staked off a strip of about one hundred feet wide through the centre of a field of about three acres, which I planted with sugar corn. This was on a rich alluvial soil, with a subsoil inclining to be clayey. The whole field was treated alike, except that the strip above mentioned was subsoiled fifteen inches deep, the rest of the field being ploughed about seven inches. The result was the same as last year. The strip that was subsoiled was altogether inferior in its growth and produce to the rest of the field.

I lay these facts before you for consideration, and I wish to be clearly understood that I have no idea of saying that I consider subsoiling a useless process, but only that I think it clearly proved that *there are cases* where it is useless or worse than useless, and I am the more desirous of taking a firm stand here for the reason that there are men who run to the opposite extreme and cry out at the ignorance of "old fashioned farmers" because they will not believe that subsoiling is useful in *all* cases. I have borne my share of ridicule among old fashioned farmers for being a "book farmer," but have not been prevented thereby from trying experiments, neither shall I hesitate to make those experiments known when the results conflict with the theories of scientific men. Of the utility of subsoil ploughing in many soils I have seen too many instances to need any argument to prove it, but, if I am not mistaken, my own experience proved that in some soils it may be useless or even injurious.

Very respectfully, your ob't servant,

H. W. S. CLEVELAND.

Professor Mapes.—I am intimate with Mr. Cleaveland, who is worthy of all confidence. His farm is the only one I have ever heard of on which the subsoil plough has not proved distinctly beneficial, and several farmers with soils of similar appearance at but a few miles from Burlington, and near Mount Holly, have benefited materially by the use of the subsoil plough. During the drought of last year, corn planted on subsoiled lands did not curl or roll on these farms, while on soils not so treated the crops suffered severely.

[From the Annales de la Societe Centrale.]

PARIS, 1851.

Report on the works offered to the Society, by M. A. Vattemare, in the names of the different States of the American Union, by Dr. De Bouis.

You have received besides, from the State of New-York, three volumes of the Transactions of the American Institute; for 1846, 1847 and 1848. The Institute may well be compared to our Society for the encouragement of industry and science, rather than to our National Institute. These volumes contain a good number of curious and interesting memoirs upon the subjects of human industry, manufactures, agriculture, horticulture, building, machinery. Confining myself to horticulture, which is your department, I despair of giving you any thing more than the *tout ensemble*—or general view. Agricultural schools for the poor as well as the rich, have attracted the attention of the generous and learned of that country, whose reports here prove the importance which they attach to the enrichment of their soils by intelligent labor, and their careful charity for the poor. At their annual *meetings*, or (as they call it,) Fairs, they distribute prizes for new inventions, the introduction of the best races of cattle, and perfecting their native stock. You will find on reading these reports how much the lovely work of horticulture is practised, and how successfully. Mr. Pell has furnished upon the history of fruit and cultivated plants, information and instruction drawn from the best sources of erudition.

The American way in almost every thing is to call a *meeting*, at which it is always expected that a *Mr. Somebody* will get up and say something better than the most learned men of the country. They announce the subject of discussion; those that do understand the subject and those that do not, all go to the meeting. Good sense, with a strong desire to learn, and a habit of reasoning, do the rest. Each brings his fruits and offerings, points out their location, history, names, &c. They thus seek to establish a synonym, and to reduce the number of names. Among these reports are recommendations of agricultural schools for the State, a botanic garden in Florida, farm work for the poor on Randall's

Island, the farming of the Bloomingdale Asylum, culture of tea, arrowroot, agave sisalana for cordage, the aracacha, &c.,&c. The potatoe offers (on both continents) a vast subject of study. We find here the good works of Samuel Van Wyck and others, on the malady of this precious tuber. The cultivation of the grape has of late years assumed a very important and worthy extension, calculated in many points of view to awaken the attention of our fellow-citizens.

[Translation by H. MEIGS.]

Le Bon Jardinier Almanac pour 1851, presented to the American Institute by Messrs. VILMORIN, ANDRIEUX & Co.

In a horticultural work, destined to be used in various localities, it is impossible to give prognostics of weather of any value generally, for they differ essentially according to local circumstances; that is, according to the direction of plains, valleys, mountains, forests, water courses, &c. These local circumstances exert a manifest influence over the mean temperature, the general direction of winds, the quantity and frequency of rains, on the number of storms, and in one word, over all the meteorological phenomena so interesting for the farmer to know beforehand. Until it shall become a science, we can place no confidence in their recurrence at the times indicated. A farmer or gardener had much better rely upon long continued observations of the weather of his own neighborhood; and they should write them down every day. The greater part of popular traditions of *weather proverbs*, so confidently repeated, are pure prejudices, which in the experience of many years, set down in good faith and intelligence, almost always fail. The meteorology of Paris, for instance, from long observation, is pretty well known. For an instance, the wind goes around the compass from east to west, and after blowing from the south, it moves to the west, then to the north, then east, and then south, blowing more or less time from each of these points. The wind rarely retrogrades so much as the semicircle, and still more rarely around the compass the opposite way. In Paris, the south-westerly winds are generally warm, humid and rainy. Those of the north-east ordinarily are cold and dry; they have often a cloudy sky, well covered over, but rarely rain. We know that very violent winds are obstacles to rain, the fall of which is ordinarily preceded by a moderate fresh breeze.

When the mercury in a barometer rises slowly and regularly, it indicates generally fine weather, or perhaps a cloudy sky, but commonly without rain. On the contrary, when it descends regularly and for a long time, it indicates bad weather. A sudden fall indicates violent wind. When the sun at setting, the air is calm and the lower parts of clouds are colored a fine red, it is almost a certainty that the next day will be fine, &c.

This volume contains nearly nine hundred pages. I observe, on the subject of raising pine apples, that it treats of no less than thirty-one varieties. About one-half of the volume is devoted to vegetables of use—the other to flowers and plants ornamental. It is valuable for reference as to plants which we may desire to order from Paris, &c.

Mr. Borden, of Texas, presented specimens of his meat biscuit, for which he received at the Crystal Palace a council medal, and he also produced a mince pie in which the biscuit served in place of minced meat; the members tasted of it and thought it a good substitute for meat, when that cannot be obtained. Mr. Borden said that his method was to take out all the kidney fat, and then, by a powerful machine, cut an ox into small pieces in twelve minutes, bones and all; put these into a cauldron, in plenty of water, boil it about sixteen hours, skim off all the fat, marrow and scum. When this soup is well settled, evaporate it until it resembles sugar-house syrup; then mix wheat flour with it till it resembles dough. I do not put in any salt, or any seasoning whatever. If kept dry, it will keep in any climate. No insect yet has touched it. Professor Playfair, at the great exhibition, said he would put weevils in it to try it. He analyzed it. Dr. Lindley examined it carefully. *A fine soup, enough for six men*, can be made of it in *fifteen minutes*, out of *only three ounces*. It supplies all the energy that meat does.

The Secretary remarked that he had translated the report on Masson's prepared vegetables, which would be a proper accompaniment for Borden's meat.

Digitized

Mr. Borden said that Masson had also taken a medal for his vegetable process.

The Secretary read the following translations, made by him from the works recently received by the Institute from Paris.

[From the Annales de la Societe Centrale d'Horticulture, Paris, 1851.]

Report upon the processes of Drying, Reduction, and Preservation of Alimentary Vegetables of M. E Masson, by a Committee consisting of Messrs. Payen, Debonnaire de Gif, Bouissere, Forest, and Bailly de Merlieux, the latter being Chairman.

[EXTRACTS.]

When in 1846, this Society gave Mr. Masson its Luxembourg medal for his essays in preparing vegetables for long voyages, few persons saw in this discovery the germ of great operations, important not only for seamen, but for farmers. Now he has perfected his processes and patented them in most of the states of Europe. A large factory is established at No. 5 Marbeuf-st., under the direction of Messrs, Chollet & Co., and is in full activity preparing a great variety of vegetables for the marine and for commerce. On his (Masson's) request, a committee was appointed to visit and fully examine the processes. He met there with the committees from the Academy of Sciences and of the Central Society of Agriculture. There is a large space for washing and clearing the vegetables of the bad parts. There is a vast stove, with many stories in it, and hurdles on which the articles are put, where they are shaken and handled during the drying as often as is necessary. The temperature is maintained at 87 degrees Fahrenheit to 93 deg. There are chimneys to carry off humid air, and means to regulate at will this as well as the access of the hot air to various parts of the stove. The processes are not yet as good as they can easily be made—the mode of admitting air to the various parts of the stove, letting off the moisture, and regulating the heat.

Masson has dried successfully cabbage, spinach, parsley, chervil, endive, sorrel, carrot, turnip, parsnip, celery, salsifie, scorsonera, cauliflower, Brussels cabbage, asparagus, green beans, potatoes, peas, truffles, mushrooms, onions, leeks, apples and pears.

The committee appointed by the Minister of Marine, consisting of Vice Admiral Mathieu, Captains Dubernad, Dufour de Mont Louis, Surgeon Senard, and Sub Marine Commissary Testard, reported that Masson took cabbage, dried fifteen months be fore, now perfectly dry, steeped in warm water thirty minutes; the cabbage regained pretty nearly its original size, and seven times its weight, when dry; it was then boiled for three hours. We added, by way of seasoning, salt and pepper only, and found it very nearly like fresh cabbage, and very good. The committee think that by great pressure the vegetable may be preserved in wooden boxes from all moisture. The experiment tried on board the corvette Astrolabe corroborates this opinion. The report signed by the captain, Gourdon, states that after fourteen years, the dried cabbage made an excellent dish. That cabbage had been kept in a metalic case hermetically sealed. By a report signed by the Director of Administrative Service, Jurien, it is stated that the dried spinach, boiled for twenty minutes, drained, buttered, and then put over heat for half an hour, made as perfect as fresh spinach.

Mr. Van Wyck thought that so far from there being any prejudice against mineral or inorganic manure either here or in Europe, as has been intimated, the prejudice must be the other way. This must necessarily be the case with all who know anything about either scientific or practical farming. The primitive earths, as they are usually called, such as silica, sand, alumina, or clay, calcarious earth or lime, must necessarily be in all good soils to a greater or less extent, and where nature generally provides them. These main ingredients usually contain others of equal importance for the growth of plants, such as soda, potash, gypsum, phosphate, &c. These or many of them, must be supplied by man, when the soil gets exhausted of them by cropping. To these must be added the organic, or the manure made from vegetable and animal matter. These are the material of barn-yard manure, which every farmer knows something about, and has done for ages. When it is said this manure has been very much extolled of late in Europe, and here, and beyond what it deserves, it has been extolled not only of late, but ages since, and ever will be. It has been spoken of more lately by certain eminent chemists of Europe, recommending it in preference to certain other manures, such as guano, phosphate of lime, &c.,—not that these were not good when pure, but they had been much adulterated, and the farmers highly cheated and imposed upon in buying them, that rather than be subject to this, the farmers had better use the valuable farm-yard manure, in which they could not be very easily cheated; that this was more or less the case with most chemical compounds prepared by chemists and druggists as manure for the farmers. Or if the latter will buy and use these, to get them of persons they can confide in, or have them analyzed by competent chemists before buying them. A great outcry had been raised in Europe against the exposition of the fraud committed on farmers in selling them adulterated, worthless manures. It spoiled the trade of the importers, and nearly broke it up. The shoe pinched, and they cried out. Thus many of the rogues were discovered from their sensitiveness and consciousness of guilt, upon being publicly charged with it. The honest and able portion of the profession and others were not to be deterred from their purpose, but persevered until they made the danger generally known. We hope the example will be followed here by our honorable members of the profession and others, and if any similar fraud should be practiced in manures, it will be fearlessly exposed, no matter whose toes may be pinched, or whose interest injured by the explosion.

The Chairman thought the plan adopted by the Institute, of improvement in agriculture by means of its Farmers' Club, is an excellent one, and ought to extend to every country, and that it would also do great service to other classes, if they, like farmers, should hold clubs, and at hours and places convenient to all. As to the doctrine of sub-soiling, it is not yet well understood. When the subsoil is brought up, and exposed to wind and weather, it takes two or three years to make it good. This deep ploughing has other great benefits, by destroying insects. Our practical farmers ought to come to these meetings. Let science and practice here unite in one of the very best causes—that of agriculture.

The subject of the relative value of mineral manures and Algæ was continued.

A large pan calculated to hold milk was presented for examination. It is of iron, covered by heat with a planish of dark gray color, said to be equal to any earthen or glass ware, while it is vastly superior to either of them in strength. It is a French invention, patented here. Messrs. Hodges & Co., have the sale of it. The union of wrought iron strength with glass surface is calculated to remind us of the supposed malleable glass of old times.

We should be glad to see here samples of all the best and premium machines, and to keep them here for future comparison, so that, if their inventors choose it, they can annually exhibit for the premium until a better one comes to supplant it.

The Club adjourned to the first Tuesday in December.

H. Meigs, *Secretary*.

American Institute,
Farmers' Club, Dec. 2, 1851.

Chancellor M'Coun was named as Chairman, but not having time to spare for the sitting, Lewis G. Morris was chosen Chairman, Henry Meigs, Secretary.

The Secretary read the following papers prepared by him:

[From the Journal of the Highland and Agricul. Society of Scotland—Quarterly.—Oct. 1851.]

The Fruits of America—Apple and Peach.—The old apple country of the United States, the home of the Pippin, the Spitzenberg, and other highly prized varieties, is on the Atlantic border, between Massachusetts Bay and the Delaware. But Western New-York and Northern Ohio have now entered into earnest competition with these old districts and threaten to bear away the palm. By its residents, the new apple country is regarded the finest fruit country in the world. The mollifying influence of Lake Ontario, which *never freezes* as Lake Erie does, extends more or less over the whole level, or slightly undulating region, occupied by the lower portion of the upper Silurian rocks, on which the rich soils of this part of the State rest and from which they are generally formed. The fruit is larger and more beautiful, but inferior (it is said) in that high flavor which distinguishes the Atlantic apples.

The best apples sell in New-York for three or four dollars a barrel, and in London for nine dollars a barrel. Nearly two hundred varieties of apples as stated by the American Pomologists, are cultivated in the United States. The first conventions held by the American Institute had, and keep in view, a classification and nomenclature of the fruits.

In the United States also, as elsewhere, the apple-trees naturally yield a heavy crop every second year. But Mr. Pell—the owner of one of the finest orchards in America—(Yes! he might have added in the world,) on the River (banks of) Hudson, has recently been investigating whether an *annual* crop might not be secured from his valuable Newtown Pippin trees, of which he has *two thousand* in full bearing. (He should have said twenty thousand trees bearing and to bear.) His experiments, we are told, were perfectly successful; only he had begun to apprehend that the life of his trees might be shortened by this course. Should this be the case, it will still, probably, be more profitable to have a succession of new trees, than to gather a crop only every second year. Mr. Pell cultivates his orchard-grounds as if there were no trees upon them, and raises grain of every kind except rye; which crop, strange to say, he finds so injurious, that he believes that three successive crops of it would destroy any orchard which is less than twenty years old. This is a physiological fact as yet incapable of being explained, but well deserving of scientific investigation.

Stephens, in his Book of the Farm, gives the following statement, which we take from him with much pleasure. For example: 5 pound turnips at 7 inches asunder, give a crop of 57 tons and 12½ cwt., whereas the same weight of turnip at 11 inches apart, gives only a little more than 47 tons. Now how easy it is for careless people to thin out the plants to 11 instead of 9 inches, and yet, by so doing, no less than 10½ tons are sacrificed. Again, a difference of only one pound in each turnip—from 5 to 4 pounds at 9 inches asunder—makes a difference of 11½ tons an acre. So that a difference of only one pound in each turnip, and two inches in the distance between them, makes the united sacrifice of 21 tons per acre! Who will deny after this, that minutiæ require the most careful attention in farming.

Historical Extracts by H. Meigs, October, 1851.

Hungary.—Length 300 miles, breadth 200 miles. Lies between East Longitude 17 deg. and 23 degrees, North Latitude 45 deg. and 49 deg. Surface about 37,000 square miles.

New-York.—Length 300 miles, breadth 150 miles.

Hungary.—Climate of its southern part unhealthy, owing to numerous lakes, stagnant waters and marshes; the northern part healthy, mountainous and barren; air sweet and wholesome. No country in the world has a richer soil than that plain which extends from Presburg to Belgrade, 300 miles. It yields grain, grass, esculent plants, tobacco, saffron, asparagus, melons, hops. peas and beans, millet, buckwheat, delicious wines, fruits of various kinds, peaches, mulberries, chesnuts, wood, wheat in such plenty that it is greatly cheaper than in England. Its horses are generally mouse-colored, and a fine breed; a remarkable breed of sheep—rams very large. The Tokay wine is from Hungary, one of the best in Europe. Before the Turks took Constantinople it was one of the most popular and powerful kingdoms in Europe. Hungary is divided into Upper and Lower Hungary, They are, in general, a brave and magnanimous people, rather indolent, leaving manufactures and trade to Greeks and other strangers settled among them. There are many Faraons or Gypsies, supposed to be real descendants of Egyptians, among them.

Established religion—Roman Catholic; although the majority of the people are Protestants, who have full religious liberty.

Language—German, Sclavonian, Wallachian and Hebrew. The better ranks speak Latin, middle ranks also. Almost all ranks speak it more or less pure, so that among them, the Latin is, in a measure, a living language.

They hate the name of Queen. They always called Theresa *King* Theresa.

The Huns subdued this country in the 3d century and gave it their name. It was part of old Pannonia. The Goths succeeded them; the Lombards drove the Goths out. The Avari and Sclavi drove ont the Lombards in the 9th century, at the end of which the Anigours left the banks of the Volga and took possession of Hungary, which at first was an assembly of states, and in 997 had its first king, Stephen, who embraced Christianity. In the war with the Turks, Lewis, king of Hungary, was killed in battle in 1526. The Archduke Ferdinand of Austria married the sister of Lewis, and with some difficulty became master of Hungary, which has ever since belonged to Austria.

The population has increased in one hundred years from less than three millions to about nine millions; of which about half a million are nobles. Only three families are princes—Esterharzy, Bathiany and Grassalcovics. In the nobility, all gentlemen possessing real property are included, *ipso facto*. The peasants, amounting to six or seven hundred thousand, live by farming; with them may be included nearly one million of *Hauslers*, who have no lands, but who live by their labor. The princes and about eight counts are hereditary governors of counties.

Fifty years ago the stud of Mezoohegyes consisted of ten thousand horses, and supplied one thousand horses annually to the army.

The Magyars (pronounced Madjars, came from the banks of the Wolga, are called true Hungarians, form three-fourths of the population east of the Danube. The vandals of Hungary call themselves Sloveni, whose dialect is about the same as the lavonic tribes.

Agriculture has been little aided by science. Their wheat is mixed with much bad grain. The peasants of Slavonia are too indolent to hoe the ground or sift the bad from the good grain. Their plantations of plum trees have been compared to forests. Madder grows wild; truffles are abundant. The people do not take the trouble to gather them, but the hogs feed on them. The wool of Hungary has been improved by the Agricultual Society of Merkopail. The olive flourishes.

The Hungarians are proud of their descent from the heroes who formed the bulwark of Christendom against the Mohammedan infidels.

The Botanical Doctrine and Vegetable Physiology taught by Theophrastus, in Athens, in the fourth century before the christian era—two thousand two hundred years ago.

Aristotle, devoted much care to the study of animals, their history and anatomy. Theophrastus, his scholar and his successor in the Lyceum, devoted himself to the science of vegetation. Before his time, vegetable physiology was unknown, and wondering imaginations had made what is mysterious still more profoundly so. Theophrastus relied wholly on close observation and experience. He travelled through Asia Minor, Macedonia, and in Old Egypt. His penetrating genius and extensive observations enabled him to discover truths before unknown. He produced a most remarkable revolution in natural history. He made botany a science, he created the art of studying structure and organization of vegetables, and the phenomena of their existense, from the moment when the plant begins to grow to the end of its course. In Dioscorides we see more of an empyric than of a naturalist. Pliny did not always understand Theophrastus, and still less did the crowd of commentators who have pretended to explain his doctrines. I will draw from those great works of his which have escaped the shipwreck of time, and I will show that our most celebrated modern botanists have drawn from that source the most ingenious systems which now divide the opinions of the savans of the world. His first work was a history of plants. It is written with a masterly hand. We admire, by turns, the purity of style and the variety of knowledge, his taste for the most difficult researches, and his sagacity in observation and in the discovery of truth. That work, of which we have the first nine books and a small fragment of the tenth, appeared about the year three hundred and fourteen before Christ, for it is dedicated to Nicodorus of Athens, who was raised to the dignity of Archon of Athens, in the third year of the one hundred and sixteenth Olympiad.

He made himself master of the knowledge of five hundred species of plants. He formed two grand classes. First, plants of woody fibre, some of which lived to an age beyond an hundred years, shrubs and trees. Second, plants of a loose texture, living hardly two years, many but a few days, or less than one year. This class he subdivided into potherbs, corn and grain plant, succulent plants, or rather oleaginous plants.

His second book is on *the causes of vegetation.* We have but the first six out of the eight books of which it was composed originally, and not fourteen, as the scholiast of Nicander says. That treatise is the only one on vegetable physiology which antiquity has left us. It is as a monument, a most beautiful homage paid to nature. In it he embraces together air, earth and sea. Theophrastus established the doctrine of the relation between vegetable and animal life, on its true basis. The reproduction of vegetable as well as animals (says he), depends upon the intimate union of the sexes, which is effected by corpuscles as fine as dust, found in the male plant: this fecundates the flowers of the female, and causes them to bear fruit. That there is a striking analogy between the odor exhaled by the dust of flowers and that of the seminal fluid of animals. Female plants never bear fruit without the concurrence of the males. The seed of a plant is its egg, in which all the elements of the future plant are contained, and which require moisture and heat for their plant to grow. It is by the root that the plant takes from the earth *a part* of its nouishment, in that as in the stomach of an animal, the materials held in solution by water there acquire the degree of *cooking* necessary to enable them to be incorporated in the substance of the plant. It is by the root that the germ breathes in a new life, the body and branches grow, and the leaves and the fruit appear. The forms of roots vary infinitely, as well as their peculiar properties. A plant deprived of its root soon perishes. Theophrastus constantly attended to the roots of plants, and it is regretted that the moderns do not follow his example.

The plant begins to grow by showing seminal leaves, whose form are necessarily roundish and simple. Some plants rise with only one such leaf; others have two. The next crop of leaves are of a different shape; they are variously acute or composite; their tints various, often of a deep green above and a whitish green below. Each of their faces is formed of fibres and vessels disposed in peculiar network; the upper surface having no communication whatever with the lower. The leaves nourish the plant from vapors circulating in the atmosphere. It is by them also that it breathes out and also throws off matter useless to its nutrition. As to the flowers, he regarded them as the seat of sex. The double flowers are sterile. He pointed out perfectly the flowers placed below the ovary, from those placed above it. Fruits succeed their flowers, with the exception of the fig, which grows without any. He also describes the methods for hastening the ripening of fruits or having them early, that one would suppose it was written yesterday.

He describes the internal structure of plants, as being similar to those of animals—using the same terms. The bark is the outer skin. In herbaceous plants there is but one epidermis which covers the cellular tissue more or less thick, and almost always succulent; that of ligneous plants is properly called bark, sometimes smooth, or cracked and rough. The bark is very important to the life of the plant—it is there that the nourishing sap is elaborated, and where all the regenerating power of ligneous vegetables is united.

The bark of the grape vine is composed of fibres; especially old vines, contain no parenchyma, and is readily detached from the inner tender bark when the vine is beginning to flower. A like decortication is naturally effected annually on the apple and the plum trees. The body of a plant is composed of fibrous capillary tubes, by means of which the absorbtion of nourishing juices and the nutrition of leaves are effected. These tubes contain an assemblage of vessels; these fibrous tubes may be traced even in the flowers and in the fruits. Besides these fibrous bodies, the plant has larger and thicker vessels, which he called veins, which conduct the sap. They are very apparent in the pine tree, but are absent in some plants. They can be traced in the leaves and flowers. Between the fibres and the sap vessels is the parenchyma (he calls it σαρξ—flesh) which is a matter spread throughout all parts of the plant, abounds in the fruits.

Wood is composed of fibres and juices; some trees have sap vessels and others are deprived of them. The goodness of timber depends upon the nature of the soil and position; that grown on high mountains and places is more compact, harder and more useful than that of swampy lands. On this account ship builders prefer the timber of Macedonia to that of Eubea, although the latter is much cheaper. Trees exposed to the north wind are worth more than those exposed to south winds. Plants are unequally distributed over the earth. Winds, birds and waves transport seeds at a less or greater distance. Grain is particularly liable to rust. Rye is subject to ergot.

Such is the character of the works of Theophrastus. The translation of them by Gaza is very inaccurate, and we must look to the original.

Extracts by Henry Meigs from "Exposition de la Doctrine Botanique et du System de Physiologie Vegetale," of Theophrastus. By the Perpetual Secretary of the Linnæan Society of Paris. Arsenne Thiebaut De Berneaud. Presented to the American Institute by the late learned Samuel L. Mitchill.

The chairman called upon Dr. Antisell to speak on the question of the relative value of mineral manures.

Dr. Antisell observed that he would have been better pleased to hear from prof. Mapes, who had proposed the question. But, said he, I will state briefly what seems to be the latest and best information. Liebig first began to make analysis of plants with a view to the exact determination of the constituents of them as respects their mineral or inorganic parts. He decided therefore from such analysis of wheat what the constitution of the mineral parts of a soil must be in order to grow wheat; so of other vegetables. He supposed that he had succeeded in making artificial manure adapted to supply the elements found wanting in a soil. He made large quantities and farmers bought extensively. It proved to be a total failure when well tried. Other distinguished chemists following him, tried such preparations and also failed. Low, Dr. Gilbert, &c., stated that the organic manures, were but secondary to the inorganic or mineral constituents.

Dr. Pusey came to the conclusion that the organics were chief and mineral secondary. Liebig, upon commenting upon the subject of fallowing land, said that in the effects produced by time, especially in a fallow, that is the period in which land is at rest, science discovers chemical action going on continuously by the influence exerted by the constituents of the atmosphere npon the surface of the soil. By that of the carbonic acid and the oxygen of the air, with moisture and drain water, the power of dissolving in water some constituents of rocks separate from the insoluble parts. All cultivated plants require alkalies, though used by them in various quantities. Silicates naturally differ materially in their tendency to solution, &c., Liebig was mistaken in this. Nitrogen, which exists in all parts of vegetables, and without which a soil, otherwise rich, cannot grow a plant to maturity, must therefore be supplied. As the fallow land absorbs it from the air, and thus has its fertility regained, and rotation of crop gives it, if the soil be first rich enough for the restoration.

Chemical science has now determined to a single pound weight, how much of any mineral manure is necessary for any given crop. In the use of bone manure it is found to be necessary to add the mineral, except that which is always to be found in organic manure. Guano gives to the Swedish turnip more solidity than cow dung does. Wheat, by means of highly nitrogenized manure, has acquired the great quantity of thirty-three per cent of gluten—the ordinary amount being not more than half that. The ammonia is not present in cow dung. Plants receive warmth from ammonia and with it they make more woody matter and more leaves, and afterwards live on air. All seeds contain starch and gluten—these decompose in the ground and ammonia warms the growing plant. By using the organic manures we but follow nature. Farmers consider their barn-yard manures as the best of all, but they do not all think that their barnyard receives only the refuse of the crop, that the great mass of vegetation has been sold off the farm and is forever lost to it. The exhausted lands of our State are made so by carrying off the organic, not the mineral constituents of the soil. Sulphate of lime will be taken by roots of plants if they can reach it. I think that the proper relative value of the mineral and the organic manures may be stated thus: *Organic manures render plants capable of taking up the mineral manures.*

Mr. Van Wyck thought that this subject of minerals as manure for land, their origin and relative value, a very proper one at this time, and he hoped the various discussions which had taken place on them, in the Club, would elicit some light on the use of them, and be, in the main, beneficial to farmers. That important mineral, phosphate of lime, or bone earth, or as Leibig, perhaps, more correctly denominates it, *phosphoric acid*, found of late to be so necessary and useful to form good soil, that is, a certain proportion of it. The origin of this, where it is to be found or had in its greatest purity, the process, or different kinds of process for preparing it, so as to act most efficiently on plants, have been pointed out and commented upon. In these discussions it has been necessary to say considerable about organic manure, such as barn or farm-yard, composed of vegetable and animal matter. All good scientific and practical farmers say these, the organic and inorganic, must be used together; they act with more efficiency on land and its products; they must be mixed up in due proportions, much more of the former than the latter, for the greatest yield. Prof. Antisell has given us his views on the subject, and he agrees fully as I understood him, on the necessity of the presence of the two kinds of manures on land, and also the great importance of barn-yard manure in farming. I do not agree exactly on the unimportance of cow-dung alone as a manure of the barn-yard; when well preserved and mixed with the usual litter of the yard, and the cows well kept on good feed, it is nearly or quite as powerful as any other organic manure. It has been tried, 20 loads of cow dung of the kind stated, and 400 cwt. of guano to the acre, on different pieces; the former produced the greatest crop. The guano had the advantage at the first start, but it spent its strength on the stems and leaves, the fruit did not mature so well. The dung began to take hold a little later and held out to the last; it possesses a more enduring fertility, as most farm-yard manure does. The secretary has read us several extracts and translations, selected with his usual taste and judgment. I must notice one or two of them. The one, relating to Theophrastus, an eminent naturalist, who lived and wrote more than two thousand years ago. The correctness of his knowledge of botany at that day, as compared with modern discoveries and improvements on the subject, is wonderful. He may be said to have originated the classification of plants; this has been greatly multiplied, extended, and improved upon by modern naturalists. In his knowledge of the organization of plants, their roots, stems, leaves and branches—the use of each of these and their functions, the sexes of plants, he is truly great and original. We talk of the *discoveries* of moderns in science, they must certainly be credited, for many, but not all, nor perhaps half. The moderns have improved much what the ancients originated and discovered; and in most of these they are only entitled to the credit of good imitators and ingenious improvers.

The article on Hungary is very appropriate at this time, when we expect every hour the great leader of the late patriotic struggle to land upon our soil. The history of such a country, ancient and modern, its rise, progress and improvements, its qualifications for further advancement and change in its political and municipal governments, is highly interesting and important, not only to us but the world

The Secretary desires that the errors of these reports be attributed to him, for there is some difficulty in doing justice to learned speakers, who are frequently rapid in elocution.

Mr. Addington D. Frye exhibited a piece of pine wood which had been part of an elevator of grain, at a mill in Greenbush. The inner surface presents the appearance of the sandy bottom over which a stream of water has passed with some velocity, the depth of the hollows being very considerable. The rippling current of grain gives almost exactly the effect of water rivulets on sand.

Mr. Frye exhibited an elegant volume, entitled "Algology," by Charles F. Durant of Jersey City. This work is composed of the sea weeds (algæ) of the bay and harbor of New-York, selected by Mr. Durant, and impressed on the pages of his work in a beautiful style. The members of the Club were unanimous in this opinion, and that in this comparatively new branch of observation Mr. Durant deserves very high commendation.

M. Frye alluded to the criticisms passed by many of the most respectable public papers upon this elegant work of Mr. Durant. From Noah's *Times and Messenger* we read the following just remarks:

"*A great Work.*—Amidst the numerous productions of the American press, we are sometimes startled by a great and unexpected work, which develops new evidence of American skill, science and enterprise. Audubon's great work on the ornithology of our country, surprised all Europe. Wilson's work on the same subject—a most graceful, agreeable and authentic research, ranks among the first of our standard works. We have now another splendid issue in quarto form, published by Putnam, entitled Algæ and Corallines of the Bay and Harbor of New-York, illustrated with natural types; by C. F. Durant.

"We have seen frequent specimens of corralines from rocks, bays and harbors, beautifully *drawn*; but never before have we met with the *originals*, in all their natural beauty and delicacy, in a work scientifically illustrated. We have long known Mr. Durant as an enterprising and intelligent citizen, of indomitable perseverance. How he is to be repaid for the cost we know not. One hundred dollars a volume must be the price, and two hundred copies must be sold, before the contingent expenses are paid. But what is that sum to our numerous wealthy patrons of art and genius."

Mr. Frye exhibited some algæ as sensitive leaves, which being laid on the palm of the hand, curl and move. Also one leaf pressed upon a piece of glass. This specimen is attached by means of its own gluten, which is colorless and perfectly transparent. Mr Frye thinks this gluten is of unusual hardness, and well adapted to the uniting of delicate parts of wood, &c. He proposes to test it in the construction of violins, &c. Mr. F. exhibited the hind foot of a grisly bear, killed near Sacramento recently, whose weight was eighteen hundred pounds.

Gail Borden, Jr., of Texas, who receives a council medal from the crystal palace, and a gold medal from the American Institute, requested the Club to try some of his meat biscuit in soup and mince pie Messrs. George S. Riggs, of Baltimore, and John W. Green, M. D., of New-York, attended Mr. Borden and saw the whole process of cooking the soup. When the soup was tasted by all the members—who added to it salt and black pepper only, there being no vegetable whatever in it, it was pronounced to be very relishing, without one dissenting voice. Messrs. Riggs and Green stated that the whole time occupied in preparing it for the table was twenty minutes by their watches. Mr. Borden presented mince pies in which there was no meat whatever added to the fruit, nothing but meat biscuit. On being questioned as to the cost of this article, he replied fifty cents per pound, but at wholesale forty. That one third of a pound, worth say seventeen cents, was enough for one man for one day. That it is not suitable as an every day food without solids, &c., nor was any article of food suitable without change. He thinks that one ounce of it made into soup and eaten every day in addition to other articles is very good, and saves a valuable proportion of other food. That its lightness, compared with other food, its perfect keeping in any climate, (if kept dry,) render it a capital reserve in all cases where food may give out, either on land or ocean. Mr. Borden's invention was prompted by humanity on learning the terrible loss of life by starvation among the emigrants by land to California.

Mr. Riggs proposed for the next Club, the subject of "the best way of preserving fruit for winter." Adopted.

The Club then adjourned.

American Institute,
Farmers' Club, *Dec.* 16, 1851.

Hon. Robert Swift Livingston in the Chair; Henry Meigs, Secretary.

The Chairman requested Mr. Pell, of Pelham, to open the discussion of the day: "The best method for keeping fruit in winter."

Mr. Pell said he would say something if no other member of the Club would. No one offering to speak Mr. Pell proceeded:

On Saturday last a gentleman of the Institute informed me that he had on several occasions stated to his friends that I could induce an apple, or other fruit tree, to bear fruit every year, instead of every other year, which is the habit of the apple particularly. Fruit, you all know, is the pistil or ovarium matured; every kind of fruit has two parts, viz: the seed and pericarpium, the former being found within the latter in various compartments and divisions. The embryo apple-seed is soon converted into a plant, and after exhausting nature's store of nourishment prepared in the cotyledons, it puts forth its roots and spongioles seeking food in the earth, and from the atmosphere by its leaves.

The earth contains, in its composition, mixtures of organic and earthy matters in many states of combination, both aqueous and gaseous. The atmosphere is composed of nitrogen, oxygen and carbonic acid gas, with a portion of aqueous vapor, part of which are selected by the tree in certain proportions. Many conditions are absolutely necessary for the life of an apple tree, and if by accident a single one is wanting, the tree cannot bring its fruit to maturity. The organs of the tree contain matter of entirely different kinds, consequently the food which can produce all the organs of the tree, must of necessity contain all its elements. The elementary ingredients of the apple tree are hydrogen, carbon and oxygen in several proportions, and sundry modifications; from these it makes its selection by the vital power of assimilation with which nature has endowed it. The food that the tree derives from the atmosphere is supplied very regularly, from the fact that we know the gases are pretty equally distributed throughout the globe; consequently the aid of man is only required in the management of the soil, which becomes exhausted of its fertilizing qualities, by the frequent crops of fruit brought to perfection by the tree. There are various ways of improving an orchard without directly adding animal manures; such for instance, as draining, and thus ameliorating the soil by removing superfluous moisture; by subjecting the surface to the action of fire, after it has been taken from the field, and returning the residue in the shape of ashes; by rotation of crops; by repose, which permits the surface to decay and increases the vegetable mould. The soil is the principal source from whence the nourishment of the growing tree is obtained, chiefly in a fluid form, which ascends the trunk, finds its way into the leaves, from thence it is elaborated through the medium of the liber, and transferred throughout the entire tree in the form of sap, bringing to perfection in due season the fruit, and the same time forming the buds to produce fruit the ensuing year. My plan, therefore, is to manure the ground in the vicinity of the tree when in full fruit, with all the component parts of the fruit bearing bud, which makes its appearance plainly perceptible while the fruit is ripening. The apple-tree being a prodigious bearer requires all the food nature has prepared, to perfect the fruit; therefore nothing is left to perfect the bud, and without human management, it dwindles away for the want of proper nourishment, and thus requires the intermediate year to gather strength to permit its vegetable constitution to yield a crop the ensuing year. If the necessary substances are supplied in sufficient quantity, the tree must bear an annual crop. It may shorten its life, but suppose it does, you derive the same quantity by my process in fifty years, that you would if left to nature in one hundred. It has been shown that a very few constituent elements include all the ingredients of the tree—carbon, oxygen, hydrogen, azote—the same form the fabric of man. How wonderful! Who would believe it, had it not been proved by analysis, that such different structures should be composed of the same ingredients, and in the same proportions nearly. Yet this is not more strange and incomprehensible to mortal man than the incontrovertible fact that the same soil and the same atmospheric influences will produce in the leaf of a grape vine a pleasant acid, and in the leaf of the night shade, directly contiguous to it a deadly poison. Our limited understandings cannot comprehend the agency of the vital principle.

It has for years been a desideratum to preserve fruits for winter's store, by some method not very costly. To do this reasonably, they should be picked from the tree by hand with great care, so as not to break the skin or bruise the fruit in the slightest degree, as the parts injured immediately decay, and ruin all the fruit coming in contact. Apples shaken from the tree become more or less injured, and totally unfit to be kept through the winter, or even shipped to the nearest ports. My Pippin fruit is all picked by hand, by men from ladders, into half-bushel baskets, from them into bushel and a half baskets, in which they are carried in spring wagons, twelve at a time, to store rooms, covered with straw, where they are carefully piled, 3 feet thick, to sweat and discharge by fermentation, some 30 per cent. of water, when they are ready for barreling for shipment to Europe or elsewhere. If they reach their port of destination before the second process of sweating comes on they will keep perfectly four months. I have kept them sound two years, and exhibited them at the end of that time at the Institute Fair, Castle Garden. They have been sent to Europe and China from my farm, packed in various ways, viz: in wheat chaff, buckwheat chaff, oats, rye, mahogany saw dust, cork dust, wrapped separately in paper, and in ice. By the mode I now adopt, I can warrant them to bear shipment superior to any other, except ice. Some kinds of apples are gathered from the trees before they are quite ripe, and the ripening is completed in the fruit room; this is generally called the maturation of fruit.

Monsieur Couverchel in the "Annals de Chimie," appears to have examined this subject pretty thoroughly, and conceived that the acid and mucilaginous matters of fruit almost ripe, are converted into sugar by a chemical process, which he calls the saccharine fermentation. Had such fruit remained on the tree until it was ripe, this fermentation would have passed into the putrefactive stage Apples and pears intended for the fruit room for winter's consumption, might always be plucked six or seven days before ripe, to mature in the room, which should be perfectly dry, airy, free from frost, and the immediate effects of the sun; in this room the fruit should be kept separate and not allowed to touch each other. Pears picked six days before ripe, and packed in kiln dried sand, stowed in such a room, will keep all winter. Apples may be preserved remarkably well in pits, made in sandy ground; sufficiently large to contain six bushels. The pits should be lined with fresh rye straw, and covered with earth sufficient to keep out the frost. The principle of life appears to remain in fruit somewhat differently than in animals; for instance, I have on several occasions cut a branch from an apple tree, and planted it, when instead of dying, it has blossomed the same season simultaneously with the mother tree, and in due course of time formed a fine tree. Flower buds will invariably blow on being cut off and immersed in water.

Chairman—How can you manage to grow apple-trees from cuttings?

Mr. Pell—Any small sized limb which bulges at its connection with the tree, and which has on it fruit buds, may be transplanted in Spring, and will bear blossoms and sometimes fruit the same year.

Chairman—Supposed that the bulge contains the means of quick development of roots.

Mr. Pell—Perhaps so. The bulge sends forth roots with great rapidity.

Mr. Pike, of New-Jersey—I rather think it is owing to an accumulation of sap.

Mr. Pell—I leave it to your experience to decide, sir. The apple contains much water which must be sweated out in order to keep. About half of which comes out at the first sweating which I give it, and the other half at the next. A single bruised apple in a barrel will decay and endanger all the rest.

The Secretary—Many years ago, I found an apple buried in my garden, about fifteen inches deep. The ground had been frozen where it lay, to the depth of two or three feet. This apple, therefore, must have been for some weeks frozen solid ; but it was now as fresh and sound as when on the tree. I have found potatoes at that depth sound in April. It is owing perhaps to the slow process of thawing. Cold preserves without limit. The mammoth of Russia found in ice in 1809, must have been there four thousand years, and its meat, skin, hair, &c., were sound. Animals devoured the flesh as soon as they could get at it.

Mr. Pell—I have kept apples sound by burying them in earth. I am informed by a gentleman that he sent a number of barrels of apples which had been filled in with cider to Europe, as an experiment, to keep. They appeared perfectly sound, but on handling, they were totally ruined—mere mush, like rotten ones.

Dr. Church—If made perfectly dry, then packed in a dry storeroom, with a jacket of charcoal around it—and over an ice-house, so that the temperature shall be about 40 degrees of Fahrenheit, I think they would keep.

Chairman requests Mr. Brown to speak on the question.

D. J. Brown—Experience has proved that fruit is kept sound for some time in a temperature below 45 degrees, but it loses much of its flavor.

Mr. Pell rather thinks not. I visited a fruit deposit constructed apparently on scientific principles; a large mass of ice over it; the house with a jacket of tan seven or eight inches thick; walls of brick; the water of the melting ice well carried off. Apples in barrels with plug holes, temperature at 33 degrees, as nearly as the owner could keep it. A hundred barrels of Newtown pippins were stored in it. I tried the apples through the holes and found all rotten that I touched. At 32 degrees they would keep for years. I have known a similar failure. I believe that the small fruits, such as strawberries and others, if put into glass jars and hermetically sealed and then buried five feet deep in the earth, would keep a year or two. A gentleman offered to sell to me his invention for keeping such fruits, and all others, perfect for a considerable length of time, for one hundred thousand dollars. I have not accepted the offer.

I think, that if these small fruits were put into the hermetically sealed jars, just mentioned, and then in cold water to remain until that water is heated to boiling, then taken out, the fruit would keep sound ten years.

Mr. Pell being asked how he managed to have apples every year from the same trees, said by supplying the trees at their roots with those constituents of manure necessary for the development of fruit. Naturally the apple-tree, every where bears only every second year; and in the barren interval I have seen a case in which I could not gather a single hat-full from a whole orchard. When frost cuts off the fruit the order is changed; the barren year may become the bearing one, &c. In Germany, grapes are kept by greasing the stem of the bunch where it is broken off the vine, and then hanging the bunches on lines in the garret. The bunches are first well cleaned of bad berries, &c.

Mr. Kentish presented a specimen of a crop of Swedes turnip, of which his correspondent had raised three successive crops by means of Mr. K.'s prepared manure. This turnip was shaped like a thick radish or a parsnip. Herd grass, six feet high was raised by same manure.

The Secretary read the following extracts and translations prepared by him:

[London Farmers' Magazine, Nov. 1851.]

We take pleasure in making extracts from this intelligent work. We consider it to be as much a member of our Farmers' Club as any other member, except its personal presence. We will hear him speak on an interesting topic, which has recently engaged our attention. Phosphate of lime. "Phosphate of lime, or as Liebig reminded Mr. Pusey, 'more properly phosphoric acid,' being proved to be the sheet anchor of green crop cultivation, it becomes an important question *where* it can be obtained, and *how* it can be purchased at the cheapest rate.

"The source of this, then unknown fertilizer, used to be bones, chalk, marl, and the limestone of the carboniferous strata; but now a vast field of additional sources of the manure is discovered, consisting of the *coprolites* (dung of the primæval lizard races,) the green sand, the *gault*, (a provincial name in the east of England for a series of beds of clay and marl, the geological position of which is between the upper and lower green sand,) native phosphorite, and the guano deposits in different parts of the world. But it has also been found that if this acid—held by the power of lime with a powerful affinity—could be rendered less difficult for the plants to dissolve out, a vast saving of quantity and a great increase in the energy of the acid are obtained; and hence the various substances containing the acid have been crushed, or treated with different acids, to facilitate the decomposition of the mass by the vital agency of the plants. It has been discovered, in the practical application of the phosphates, that the more minutely the substances containing these phosphates are divided, the more powerful will be the effect. Thus bones reduced to powder are more potent than those denominated 'half-inch' from the size of the sieve through which they have to pass after crushing. The coprolite is almost impervious to either air, frost or water, and will resist all efforts at decomposition for a very long period, and hence has to be powdered before it produces any very striking effect; and the limestone has to be burnt, and its particles disintegrated, before it will yield up its constituents to the plants which need it. The effect of these operations is purely mechanical. It increases the points of attack; it enables the plant, and the water, and the oxygen to have free play at a much greater surface, and hence places the locked-up acid much more within the range of their power. According to our present views of vegetation, physiology and chemistry, the more soluble the component parts of a manure may be, the more potent will they be found in their agency. Now, phosphoric acid, as it exists in bones, is either insoluble in water, or so slightly so as to be almost inappreciable to chemical tests. It is locked up by the lime which holds it with a very powerful affinity; but if an acid, such as sulphuric, muriatic, nitric, &c., is added, it displaces a portion of the phosphoric acid, and takes its place; the displaced acid unites with a smaller portion of lime, and becomes a bi-phosphate; and in this combination it is soluble in water.

Now this operation may either be performed by the farmer himself, or it may be done by the manufacturer, on a large scale, and purchased ready made. The reason against the farmer doing it at home is mainly the danger of persons unacquainted with the nature of chemicals, exposing themselves to the influence of so powerful an acid, and the chances of such persons, by some bungling in the process, endangering the success of the operation. And not only the danger of mixing, &c., but the difficulty of drying and rendering fit for the drill are nice operations, to which all farm tenants are not easily made adepts. Hence many persons buy superphosphate of lime ready made, pulverized, dried, and ready for work. And the question arises, is this economical? Now, Dr. Anderson, the chemist of the Highland society, has taken a great deal of pain with the subject; he has had and analyzed specimens of the manufactured superphosphate, and has found that while it is dreadfully limed and in a very favorable state for drilling, it is not a bi-phosphate at all. He shows that properly prepared superphosphate of lime, that is, dissolved bones, costs £7, ($35) a ton and a quarter; and these contain phosphates 1,120 pounds, ammonia 89 pounds. A farmer who farms high, and who has, on all practical points of routine, a very sound and correct judgment, would dissolve his own bones. He first spreads a layer of ashes on a lime and sand floor, then pours out his bones on this, and pours the acid on this mass. Never could a more pasty substance be created. The ashes take up the acid to their different alkalies, the carbonic acid bubbled up, and the effect was that the decomposed and disturbed ashes so mixed with the bones that the whole looked like a pulpy, creamy substance, eminently fit for a manure for the turnips; but it really was not. Beyond converting the lime, soda and pot ashes into sulphates, it did very little to the mass, and kept the bones in a very great measure utterly untouched. But though it is perhaps seldom that so gross an instance of mismanagement takes place, yet how often does the farmer perpetrate chemical blunders. They will mix ashes and even lime to dry the dissolved bones, and think that in counteracting the free acid they are saving the iron of their drill implements; while they are in reality counteracting the acid and *undoing their work.* The mass (of dissolved bones,) must be dried by something. If soil is used, it will at least take up some of the acid; nay, even saw-dust or decayed wood will do the same; so, if it be applied in any state, excepting by the liquid manure drill, we shall find some sort of vehicle necessary to enable the farmer to lay it on, and it is difficult to obtain any which will not take up more or less of the acid. For ordinary purposes, we have never met with any thing equal to the refuse of decayed stick heaps. (Nor I, who have found its value as a part of manure these fifty years past.) It is usual for all farmers to take the hedge clippings, &c., and cart them to an out of the way somewhere. These decay, and leave a friable absorbent, carbonized mass behind. Now, nothing is better than this to mix with the dissolved bones to render them friable, and if it be carefully collected, sifted, and dried, it is an excellent mode of conveying the bone matter to the soil. Altogether we think the farmer had better dissolve the bones he uses, in preference to purchasing he knows not what." Extracts by the Secretary, Dec. 14, 1851.

[London Farmers' Magazine, Nov. 1851.]

Penrith Farmer's Club.—This flourishing Club held a meeting for discussion on Tuesday, the 12th of August. Subject—rotation of crops.

Mr. Barker, of Greystone, read the following paper:

"I do not expect to throw much light on the subject, but if by agitating the question I can induce others better qualified to give their opinions, I hope, eventually, we shall make a step in advance, and by consolidating those opinions, put the *rationale*, (the reasons) of cropping in a clearer point of view and in accordance with the advancement of science and the improvement of the age. I therefore trust that, as we have all one object at heart, every one present will contribute his mite of information. If I be right in my idea of the usefulness of our club, it is not in making it a debating society, where the arguments advanced by one member are to be met with opposition by another party, purely for the sake of contradiction; *but that we should all make common cause with truthfulness*, to give our suggestions, and to communicate any improvements we may have seen or practiced; any better processes followed, any superior methods of production, or any more economical mode of management in any of the different branches of husbandry. At the same time *failures* should be duly noted and mistakes candidly avowed, and particularly in cases where practice fails to carry out the theory. The old and barbarous mode of cropping was to sow the land with corn (grain) year after year till it was exhausted, and then leave it in grass or rather weeds until time brought it about. This primitive practice is now obsolete, or nearly so; it gave way to the alternate system introduced from Flanders, and which formed the four course shift of the Norfolk husbandry.

That crops of the same kind of grain or roots (with perhaps the exception of potatoes) do not succeed when they immediately follow one another is a fact now universally admitted. Decandolle, Macaire and others supported a theory that the exudation from one class of plants, while poisonous to themselves afforded food and nourishment to those of a different genus. The researches and discoveries of more modern chemists have, however, given us a clearer and better perception of the wonderful workings and agencies of nature as regards the matters required in the raising and building up of crops. Thus, for instance, they have ascertained that wheat requires more silica than beans, and that beans require more potash than wheat. Hence the advantage of one crop of these following the other. Professor Way states that the potash of clay soil exists in them as silicate of potash derived from the felspar, &c., of the disintegrated rocks to which the clay owes its origin. The silicate of potash in felspar is composed of silica and potash in tolerably equal quantities; but a crop of wheat takes off 83 parts of silica for every 14 parts of potash, so that to obtain all the silica it requires, it *liberates more potash than it has any need of!* A crop of beans just reverses this process: it removes from the soil 70 parts of alkali for every 5 parts of silica. It is then almost indifferent which of the plants come first. The one which follows in rotation finds potash (if beans) or silicia (if wheat) ready prepared for it. The same sort of rule holds with regard to the elements and mode of assimilation of plants of other crops." *Extracts by H. Meigs.*

[From the Revue Horticole, Paris, June, 1851.]

Moss on Fruit Trees.—The destruction of this is requisite for their health. These Cryptogames must be removed, for the health of trees is as important as that of animals. The poets pretend that the mosses planted on trees preserve a humidity which is necessary to their vegetation, and that they in turn give the tree a poetical aspect, and that they preserve the tree from rigorous cold; and that by a wise foresight of nature they are justly placed on the north side of a tree on which they appear numerous and *tufted* This reasoning, judicious as it appears at first sight, does not suit many cultivators, for they prefer beautiful and vigorous trees to mossy ones, and we partake of that opinion ourselves.

We will not say that the mosses are contagious, but they do multiply with great facility and are very fond of languishing trees.

Scraping them off is not enough, for their roots will remain in the little fractures of the bark. Take quick lime and paint the tree; this cheap plan is effectual. It is not new, but it is not as much in use as it should be, for we have seen old trees renew their vigor, become loaded with flowers and fruits, and their bark as smooth as young ones by this process. The best time to kill moss is after the fall, so that it acts on the tree during the winter.

[From A. Vattemare, Horpin, Paris.]

Researches on the Bran of Wheat and other Grains.—Nothing seems easier (says Edin) than making bread. Grind the grain, mix it with water, and put it in the oven. Those who are habituated to the enjoyment of the finest human inventions, without reflecting on the pains they have cost before they were complete, look at all these operations as ordinary and trivial. Before man succeeded in making good bread, he had to cook the grain in water, make a sticky (viscous) cake, of a disagreeable taste and hard of digestion. It is only within the last century that men have known the exact nature and composition of grain—the quantity of nutritious matter which it contains. To show how behindhand we were an hundred years ago or more, let us look at Article 24 of the Law of Bakers, in the time of Louis XIV, in 1658:

"All bakers are forbidden to mix bran with the bread, for it is unworthy to enter the human body. Fine for doing it, sixty livres for each offence."

This law was renewed in 1680. At the end of the sixteenth century they derived from grain only one-half of its weight in bread; that is to say, one-half less than we now obtain. This appears distinctly in the rations of armies.—*Extracts by H. Meigs.*

[London Farmers' Magazine, Nov. 1851.]

On the Culture of Parsnips.—The profitable growth of parsnips requires a deep, rich, warm loam. The rotted farm yard dung is laid on the stubble, in the end of autumn, and plowed under with a deep furrow. In the early spring, the land is moved lengthwise and crosswise, by two operations of a close tined grubber, which pulverises the soil and raises the weeds to the surface, which are picked by hand and removed. The seeds of the parsnips are then sown in March, on the flat ground, by a drill machine, with lengthened coulters, which make ruts for receiving the seeds, at the distance of eighteen inches, and are covered with a brush harrow. When the plants are grown three or four inches high, they are singled by the hand hoe to the distance of one foot from each other, and during the summer, the intervals of the drills are scarified and the rows weeded and properly thinned. In this condition the crop grows until the time of storing, which is not early, as the roots are not easily hurt by frost. In the end of October or November, cut off the tops and fibres, and store the roots. The tops are given to pigs in open yards, where part is eaten and the rest converted into manure.

They are not used for horses, but for swine the roots are highly beneficial, either in a raw or steamed condition; and for feeding cattle their use is very much recommended. Milch cows fed with them give much milk, and yield a butter that is very well flavored. The steamed root is best, and should be mixed with chaff in the vats. This is quickly eaten by the cows, and they do well upon it in all respects. Steamed roots mashed and mixed with meals, given to the pigs in troughs, lukewarm, and raw parsnips, are very nutritious to store pigs in open yard.

An ordinary ox will eat one hundred pounds of parsnips daily when first put to be fattened. Water is given them once a day; cabbages and potatoes are given occasionally in order to change the food and prevent cloying on the parsnips, and one of hay are required to fatten by Christmas, an ox of about 70 to 80 stones of dead weight (980 to 1,120 pounds.)

One hundred pounds of parsnips contain as follows:

Water,	79.4
Starch and fibre,	6.9
Gum,	6.1
Sugar,	5.5

Parsnips increase the butter but not the milk, while turnips increase the milk and not the butter—which shows the fattening quality of the parsnip. Parsnips are brewed instead of malt, with hops.—*Extracts made Dec.* 15, 1851, *by H. Meigs.*

The Chairman presented Catawba grapes from his Hudson River farm, which, after being picked from the vines three weeks, were packed in saw dust in kegs. They were very slightly wilted now, and the members of the club on tasting pronounced them excellent.

Mr. Meigs spoke of the future vast production of American grapes, now rapidly coming on, thanks to such distinguished citizens as Underhill, Longworth, and many others. He hoped that we should find cheap and perfect methods to keep this delicious fruit on every man's table from one vintage to another; and this, too, with strong reference to *the highly salutary character of the grape to the constitution of man!* He therefore moved that the preservation of grapes in fresh state be the subject for next meeting.

Mr. Pell moved to amend by adding vegetables. Adopted.

The Club then adjourned.

H. MEIGS, Secretary.

AMERICAN INSTITUTE,
Farmers' Club, January 6, 1852.

ALEXANDER H. STEVENS, M. D., in the chair; HENRY MEIGS, Secretary.

Mr. Meigs stated the question which had been proposed by him: "The best methods of preserving our grapes fresh; also, vegetables."

Chairman.—As rot is due to the presence of the oxygen of the air, it will be necessary to exclude it as perfectly as possible. We know that animals keep longer in their skins or feathers than when they are stripped. How would carbonic acid gas do?

R. L. Pell, being called on by the Chairman, said, that he had experimented on the subject; had made tin vessels of the capacity of six quarts each, put fresh fruit in them, pumped out all the atmospheric air, and then hermetically sealed them. On examination decay had taken place at the end of three months, and soon after they became a mass of corruption. Those fruits would have kept as well out of the vessels as in.

Chairman.—Has any gentleman present any knowledge of the preservation of grapes buried several feet deep in earth. Apples and potatoes have been so preserved.

Judge Van Wyck.—I have preserved Isabella grapes in sawdust of oak wood, in jars covered tight; these grapes kept very well until near the next spring. Some of our farmers preserve their apples well by putting them on shelves in dry cellars. The apples must be sweated and wiped often enough to keep them always dry; and beforehand the apples must be most carefully picked and kept free of all bruises. In this way they keep well until spring. The temperature of the cellars should be kept uniformly about thirty-five or forty degrees Fahrenheit. I have preserved grapes well in cotton. Pine sawdust is injurious to the flavor of grapes.

Mr. Pell.—In 1849 I tried an experiment on my house grapes. I put some of them in cotton, some in kiln-dried cork dust, mahogany dust, in very tight boxes made of pine wood; placed all the boxes in a garret. They were all decayed by the first of January following. At the same time I packed Isabella grapes in barrels, some with cotton, and others in sawdust. All these grapes were sound in the second week of the following January.

Chairman.—The grapes we import from Europe are picked some short time before they are ripe.

A Member.—The grapes from Spain are partially dried before they are packed. In the south of France they cause them to be partly wilted before packing.

Mr. Pell.—I carefully dried my House and Isabella grapes before packing.

Chairman.—Drying could be readily and effectually done by a current of heated air.

Judge Van Wyck observed that President Tallmadge had devoted some care and expense on the cultivation of grapes, and desired the Chairman to call him up.

The Chairman requested him to speak to the question.

President Tallmadge.—My remarks will rather tend to the continued growth of grapes than to any effort to preserve their freshness after being ripe. I desire every effort to be made for so useful a purpose, but I prefer reliance on production, and on a greatly extended production of the most precious kinds—for they are few in number, and require in our climate peculiar care, which, however, according to my experience, seems to me capable of not only extending to the mass of the people such wholesome luxuries in plenty, but at a cheap price; and I doubt whether the preservation of our native grapes, Catawba and Isabella, would quit the cost of preservation. We import grapes from Portugal and Spain; they have a thick skin and solid pulp, widely differing from our Catawba and Isabella, which have tender skins and watery pulp. We may hang them in clusters by strings on poles in a dry room and keep them till mid winter. But they are apt to lose their flavor if the room is kept either too dry or too damp. Sawdust appears to extract the flavor. And the non-success of Europe in the preservation of grapes is a lesson for us.

Chairman.—The artificial climate of a green-house gives success. I have found it less troublesome and less costly than preservation of them.

Hon. Benjamin French, of Braintree, Massachusetts.—The subject under consideration, Mr. President, is one which I deem of great importance. For as we now have succeeded in growing fruit in our middle States, and in our New-England, superior in quality to much of the European products of like kind; and the preservation of them in all their freshness to a certainty is extremely desirable. And in this much depends on the condition of the fruit to be preserved. I have known the fine Bartlett pear, preserved in an ice house, keep its beautiful appearance, but it had become worthless. Apples keep tolerably well in burned ground plaster of paris. One rule is held—that of keeping the fruit cool and *from light*. Professor Duval relates that when he had a new fruit, he called his friends to taste it—it was a pear—he could not find it! Two years afterwards he called his friends again to judge it, for he had found it, and in an apparent sound state; but behold, it was now rotten in two days. Its preservation so long must, I think, be chiefly due to the absence of light. Mr. Curtiss, of Boston, has made a discovery in the fresh preservation of fruit. He has sent them sound to California and to London. As to the expense of these operations I am not informed. In the ripening of our New-England fruits, we want another fortnight of summer. Our Easter Beurre pear has kept well. As to the preservation of our own native grapes in a fresh state, I deem it to be of very great importance, considering their present good quality, and looking to the future vast amelioration in quality and universal cultivation of them. We desire cheap methods of keeping them as nearly as we can to the coming crops, as we now do apples. Mr. Longworth, of Cincinnati, Ohio, writes to me that he makes this year upwards of two hundred thousand bottles of wine, equal in quality to any other vintage. The first taste of Catawba wine is not pleasant, but rapidly improves on the palate. We have now acquired a delicious new grape, called Diana, the name of the lady who first brought it into notice. It is about a fortnight earlier than the Isabella. On my place I have not had Catawba ripen properly in fifteen years, until this last fall. The Diana grape is small, cluster very compact. My friend, Mr. Ritchie, of California, writes to me that clusters of the grape there are some of them of the weight of ten pounds. There is no difficulty there—it is a wine country, and we should have the wines from there before long. We deem a cluster of grapes weighing six or seven pounds quite a large one grown here. As to the keeping of fruit Curtiss' method is not made public. With regard to our apples and pears, it is a great treat to have them through the winter in all their freshness—to cut up for your party, late in the winter, a couple of dozen of your best pears is delicious. We are trying experiments in preservation. Some have tried clean dried straw in a coach house, where fruit would not freeze from the amount of straw covering. I have taken apples from my trees when frozen hard, and, to my surprise, they kept well. As to the Diana grape, it resembles Catawba in color. The lady whose name it bears obtained some Catawba grapes from the Hon. Mr. Seaver; she planted the seeds. This Diana vine stood near a wild black grape, which may have caused the quality of the Diana grape. Longworth has experimented on seedlings of Catawba and Isabella by millions, with little, if any, success.

George S. Riggs stated that Father Juan de Ugarte, about the middle of the sixteenth century, introduced into California almost every kind of grape grown in New Spain.

President Tallmadge.—I do not oppose any mode of preservation that is profitable; but we wish here always to follow a safe leading, and none other should be pressed or urged upon us. We know the distinguished care, skill and experience of Mr. Pell. We must not puzzle the farmers about grapes, or any other cultivation. Let us always encourage production universally. With these few general remarks, let me speak of the Catawba and Isabella grapes as natives; but our true native grapes ripen a fortnight sooner than the Isabella, and more than that before the Catawba grape. Our wild grapes are fond of the banks of rivulets, in alluvial soil. In our fruit convention, where I had the honor to preside, a catalogue of our grapes was presented, which contained the number of three hundred varieties of our grape vines. It was there agreed that the product of the seeds was so uncertain as to quality that out of millions hardly a good one can be obtained. Mr. Longworth, of Ohio, has proved this by very large experiments. The modification of the character of grape by different localities was well established also. On motion of Mr. Colt, of Paterson, to inquire and determine how many of our grapes are worth growing, he said all agreed that only nine of them were worth growing, and that the three hundred names would be reduced to about fifty genuine natives. Some members believed that there were no more than fifteen or twenty varieties. The art of naming, for the purpose of selling as new vines, had gone abroad, and it was well done to put a stop to it. Among our precious grapes, I consider the Black Hamburg the best. I have, from Dr. Ives, of New-Haven, a new grape called the *Zinfendal*, which bears well in the house, and appears to me very clearly to be of the Black Hamburg family--perhaps the third in order. It has not so large a berry as the first; we find it exceedingly delicious. We cut off three-fourths of the clusters which present themselves on our vines, thus leaving to mature about sixteen clusters on each vine. We find the Zinfendal cluster very close with small berries about the size of buck-shot. By means of slender scissors, we penetrate the cluster, cut off berries enough to make room for the remainder to grow, so that they attain the size of an ounce ball. Many of our visitors select it from the best sorts of our dessert, preferring it to Black Hamburg. About twenty years ago I commenced raising grapes. We have here but three months real summer—that is, June, July and August, while April, May, September and October are always liable to frost. Now, the precious grapes we have require more than three months to ripen. I found it practicable to make out, this summer, without the expense of artificial heat. I examined the best grape houses in our country, especially of New-England. I have now found the Black Hamburg and others ripen perfectly; and we now believe that two or three acres properly devoted to raising the fine grapes, in this economical way, would yield as much profit as ordinary farms do, as at present cultivated. We have a house eighty feet long, and twenty-one feet wide, and twelve and-a-half feet high, shaped like the gothic arch, and is all glass. We use the cane pruning in preference to spur. The canes are supported by the posts which constitute the frame of the building. We ventilate by means of a moveable board hinged at the level of the earth, and by like arrangement on the top of the building. We water from the rain received on the roof, and preserved in a tank. Light and air reach the bottom of the house, and consequently our clusters are found to begin as low as at one foot above the soil, while in many houses the lower part being so boxed up as to prevent this, their vines begin to have clusters at eight to fifteen feet high. A vinery as large as ours can be built, in a plain yet substantial way, for two to three hundred dollars, and at the end of four or five years, the annual crop will, beyond a doubt, pay more than the entire cost of the establishment. More than two hundred copies of our vinery have been taken. Like houses may, and we hope will, soon be common in our country, and thus supply the people with the delicious dessert now confined to a few. Some persons have covered the lower ends of their vines with mats, or other covering, and have found that mice avail themselves of it, and ruin the vines by gnawing them. We cause our vines to be suspended under the glass by wires and strings, at a distance of fifteen to eighteen inches from the glass, to avoid the scorching of the grape leaves by focal rays.

Mr. Meigs read the following letter from A. Williams, Esq., of San Francisco. He had read the newspapers containing an account of the establishment of the Western World Institute.

(*Copy.*)

SAN FRANCISCO, *December 4th*, 1851.

H. MEIGS, Esq.:

My Dear Sir—I take the liberty to send to you, from the Western World Institute, a specimen of the Russian bald barley, weighing sixty-seven pounds to the bushel, and twenty-five to fifty packages of California native flower seeds, for experiment for yourself or friends, for cultivation in the Northern States.

Our enterprise is of course very small at present, but we are endeavoring to get on old *Ogre's boots;* to try to follow the Anchises steps of our "illustrious predecessor," the American Institute, a slight imprint of which you will see in our circular. We can produce big stories, at all events. Only think of a teamster turning round a two-horse wagon on the top of a stump of one of our trees! What would Old Wouter Von Twiller say to a cabbage head *thirteen feet in circumference? or an onion weighing twenty-one pounds?* Sinbad, the sailor, will soon be out of print, and Munchausen be discarded from our libraries. Did you read the address? It is all positively, really true.

Yours, very respectfully,

(Signed) A. WILLIAMS.

On Thursday evening the doors of the agricultural and mineralogical exhibition, on the corner of Washington and Kerrney streets, San Francisco, were thrown open to the public on the occasion of the presentation by Mr. C. A. Shelton of a silver cup, which had been awarded to Mr. Horner for the best assortment of vegetables and grains at the exhibition, and a small hat, made of California gold, to Messrs. Boyd & Dolsen, for the best hats of California manufacture. The committee appointed to examine the vegetables, and report the parties entitled to the prizes, consisted of the Hon. Messrs. King, Wright, Fremont, Snyder, and S. B. C. Saunders. The same committee appointed A. Williams, Esq., to deliver an address, on the occasion of the presentation of prizes. After the audience had assembled he arose and addressed them as follows:

ADDRESS OF ANDREW WILLIAMS, Esq.

Ladies and Gentlemen.—Having been invited by Mr. Shelton to present to our fellow citizen, Mr. Horner, a silver goblet, as a premium for his success in advancing the Agricultural interests of our State, I embrace the opportunity to congratulate you upon the occasion which we are assembled. I congratulate him, whose laudable enterprise and untiring industry in producing so varied and rich a display of the products of our soil and State, have been crowned with such brilliant success; and especially do I congratulate our State and country upon the first dawn of that development of our agricultural wealth and resources, which is destined soon to convert these western "forests into a garden, and make the wilderness bud and blossom as the rose." It is the first bright ray of that morning sun of American enterprise, perseverance, and industry, and skill, whose rising beams shall warm into life the young but giant energies of the great West, and whose meridian splendor shall throw its radiance over every nation of the earth. But a short day shall intervene, before the whole of this western coast, from the ice-bound regions of Kamschatka and Lapland on the north, the benighted realms of Patagonia on the south, shall spring, with an electric bound, into life, beneath its vivifying rays—when the swarthy Indian in his sunny isle, the copper-colored Celestial in his secluded empire, and the isolated inhabitants of Siam and Japan, shall see and acknowledge, and bless the light which is so soon to dismantle them from the concentrated darkness of six thousand years. A new era has dawned upon the world; a new light has illuminated the whole earth. The evidence is before and around you, in this room. American enterprise has developed the resources, and improved the condition of every spot on earth, touched by its magic wand. Like the philosopher's stone, it turns every thing it touches into gold.

"Nihil tetigit quod non ornavit."

The rapidity of the change is no less astonishing than its beneficence of effect. Look around you! Why, the grizzly bear, and the very coyote before your eyes, whose growl five years ago, was the nightly music of the chapparal that then covered the spot where we stand, are now exhibited here as curiosities, on the same spot, in the hall of science and the arts. On the site of our Phœnix city, a few adobe huts have, in three years, been succeeded by a commercial mart, the pride of the western coast for nearly eight thousand miles. The inactivity of the sombre Spaniard, the indolence of the native Californian, have vanished with the retiring footsteps of the forest hunter, in his retreating track: the Golden Gate has flung open her portals to the commerce of the world, and the dazzling blaze of our onward course, sacred as the fire which Prometheus drew from Heaven, is attracting the inhabitants of every clime, with a new and irresistible impulse, to

"The land of the free and the home of the brave."

And such has been the giant career of America—clear, full, and bounding onward and upward, to that lofty pinnacle of moral grandeur, indicative of the prosperity and happiness of her citizens, and the greatness and glory of her institutions.

And what has produced this change in the condition of the world and the destiny of man?—this onward march to universal freedom in government, and in the arts and sciences, to improvement and perfection? It is the same American spirit which has fired the heart and nerved the arm of a single individual to make in the last few months, the creditable and splendid collection that adorns this hall. It is the same American enterprise and perseverance which has enabled the recipient of the testimonial

I am about to present, to surmount obstacles, overcome difficulties, and illustrate the great productive powers of the soil of our State—a State whose agricultural capabilities, a far richer treasure than her mineral wealth, are unsurpassed in any portion of the earth, and whose variety of useful products are equalled only by their unparallelled extent and adaptation to the wants of man. In most of the others, a single excellence is characteristic and predominant. The lumber of Maine, the granite of New-Hampshire, the wool of Vermont, the manufactures of Massachusetts, the agriculture of New-York, the coal and iron of Pennsylvania, the grain and fruits of the Middle and Western States, the copper of Michigan, the corn, tobacco and hemp of Virginia and Kentucky, the cotton of Alabama and Georgia, the sugar of Louisiana, the sugar, cotton and indigo of Texas, the turpentine of North and the rice of South Carolina, constitute respectively their most prominent and distinctive interests, and are the pride and glory of their citizens. But there is scarcely one of these that cannot be found or produced in our own State. In the natural productions of the earth, conducive to the sustenance of man, is our State abundantly prolific. As we approach the centre of the State, the banana, the orange, the lemon, the olive, the fig, the plantain, the nectarine, the almond, the apricot, and the pomegranate of the South, mingle in the same luxuriant gardens of Los Angelos, with the peach, the pear, the cherry, the plum, the quince and the apple of the North—the fruits of the oak and the pine, of gigantic size and delicious taste, furnishing to man and beast the richest and most nutritious food—the beautiful salmon of the noble Sacramento, often weighing thirty, forty, and in some instances sixty pounds, vieing with any other in fineness of texture and richness of flavor, as well as in size—and one uncommon article of white sugar, the exudation of a species of pine tree called the sugar-pine—the successive ranges of mountains, whose extent is lost to view in the distance, waving with rich harvests of oats, the spontaneous production of the soil—solid trees of red-wood on the banks of the Trinity and Shasta rivers, sixty-eight feet in circumference; hollow ones whose cavity has sheltered sixty men and twenty mules for the night; pines crowning the dizzy peaks of the Sierra Nevada, three hundred and eighty feet in height, the first two hundred and fifty feet without a branch or limb—an extent of growth so far beyond the ordinary size as to seem almost incredible, but well known, and seen, and verified, by the uniform and concurrent testimony of many whom I see setting around me. And we have some still larger and taller specimens of other things nearer home, here in our own city, to which many who hear me will bear witness from experience, and which comes to maturity "monthly in advance"—rents, the tallest kind of rents, put up higher than the pines, and sometimes harder to get round than the red-wood! I hold in my hand a statement signed by twelve citizens of the country of Santa Cruz, Messrs. McLean, Gibson, Malison, Peck, Clements, Pedroit, Mills, Stevens, McHenry, Sanborn, Kifta and Loveland—gentlemen of unquestionable integrity, an extract from which is as follows:

"On land owned and cultivated by Mr. James Wilson, an onion grew to the enormous weight of 21 lbs.; on this same land a turnip was grown which equalled exactly in size the head of a flour barrel. On land owned and cultivated by Thomas Fallen, a cabbage grew which measured while growing, 13 feet 6 inches around its body; the weight is not known. The various cereal grains also grow to a height of from 6 to 12 feet; one red-wood tree in the valley, known as Fremont's tree, measures over 50 feet in circumference, and is nearly 300 feet high." Added to these astonishing productions are a beet grown by Mr. Isaac Brannan, at San Jose, weighing 63 pounds; carrots three feet in length, weighing 40 pounds.

At Stockton, a turnip weighing 100 pounds. In the latter city, at a dinner party for 12 persons, of a single potato, larger than the size of an ordinary hat, all partook, leaving at least the half untouched.

These may be superlatives, but they do exist, and they show what our climate and soil are capable of producing. Nor are these more seemingly incredible than the well known fact, of a portion of our State, nearly 600 miles in length and 50 in breadth, whose every foot of ground, from hill-top to valley, is more or less impregnated with gold of every conceivable form and size, from dust up to lumps weighing 30 pounds.

But let us cast our eyes around this hall, and what do we see—even from this hasty collection and casual contribution—an agricultural, botanical, geological, mineral, and floral exhibition, embracing nearly 1000 varieties of pressed flowers, of every hue, and of surpassing brilliancy, nearly 200 varieties of which are illustrated by truthful and beautiful drawings; seeds of more than 300 varieties of native flowers; 20 varieties of lily and other bulbous roots, embracing the remarkable soap plant, rivalling the finest boast of the toilet, and adding to it healing qualities, as if provided by nature for the double purpose of sanitary and abluent properties for the native sons of the forest; specimens of 1000 varieties of the principal quartz and soils of the State; about 20 varieties of the principal grapes and clovers, many of the specimens pressed, embracing the burr clover, that feeds to fatness "the cattle of a thousand hills," when all other sustenance is parched and withered; Shelton's mammoth clover, whose stalks from one root covered an area of 81 square feet, some of the stalks six feet long, a half inch in diameter, and the clover head five inches in circumference; single stalks of the white lily producing 100 flowers of indescribable delicacy and beauty; beautiful specimens of minerals and pressed flowers from H. Pratten, Esq., of Nevada; stalks of the oat, gathered by Mr. Shelton, 13 feet high; specimens of wheat and barley, having 150 and 200 mammoth stalks springing from one root, the produce of a single seed; the red sugar beet, grown by Mr. L. M. Beard, of San Jose, 28 inches in circumference, and weighing 47 lbs; some from the luxuriant gardens of Alderman Green, of this city, of only two months' growth, weighing 6 and 7 lbs; cucumbers raised by the same, 18 inches in length; onions cultivated by Messrs Smith & Broden, and contributed by Messrs Chamberlain & Musses, 5, 6 and 7 inches in diameter, and weighing 3 and 4 lbs each, nearly 70,000 lbs to an acre, and the whole number from the acre supposed to average 1 lb each; potatoes, from H. Speel, of Santa Cruz, 120 lbs from 5 vines of a single hill; one from Mr. B. J. Stevens, of Santa Clara, 13 inches in length, 27 in circumference, and weighing 7½ lbs; the Russian bald barley, grown by Mr.

Johnson, on his ranch upon the banks of Bear river, weighing 66 lbs to the bushel, with a kernel nearly double the size of large wheat; raspberries 5 inches in circumference; barley from the San Jose Valley, of which 965 bushels were produced from less than 5 acres of land; some from the farm of Madame Scoofy, of Sonora, where 12 acres, by ordinary cultivation, produced a crop of 53,000 lbs; these walls festooned with luscious grapes from Captain Maltby, of Los Angelos—single bunches from the garden of Gen. Vallejo, at Sonora, weighing 10 lbs; apples, peaches, figs, and other fruits of enormous size from the same; from Mr. Horner, tomatoes weighing 2 lbs each; pumpkins and squashes 100 to 140 lbs; cabbages 2 feet in diameter and weighing over 50 lbs; onions, beets and potatoes of enormous size, not isolated, but by hundreds of bushels, the top onion producing the first season from the ordinary seed, with samples of wheat and barley of uncommon size and weight; and added to the exhibition are also beautiful specimens of the Daguerrean and phonographic art, from Mr. Shew and also from Mr. Bradley; lemon syrup of exceeding excellence, manufactured and exhibited by Messrs Sweet & Co., of this city; exquisite feather work, by Madame Paccard; besides samples and specimens of countless varieties of plants, herbs, vines, fruits, grains and esculents of exceeding size and singular perfection, collected by Mr. Shelton, to the enumeration of which the proper extent of this address is wholly inadequate. Among the tropical productions introduced by him, are coffee, ginger, banana, plantain and pomegranate, which are now in progress of successful cultivation, and he has this day received from Valparaiso, a choice assortment of rare and valuable exotics, the entire stock of a green-house, embracing two thousand of the choicest French and Italian grape vines, fifty varieties choice pear trees, six varieties of plums, three of apricots, twenty of peaches, five of currants, and seven thousand asparagus plants. Of flowers, there are fifty varieties of jessamine, four of althea fratres or African Hibiscus, eight of chrysanthemums, twelve of althea, the wax plant, pinks, cactus, eighty-four dahlias, and over one thousand rose bushes.

I have recently been informed by one of our adopted Celestials, whose phrenological developements of "auri sacra fames," predominated over his "amor patriæ," that our soil, climate and seasons are well adapted to the growth of the tea plant, and that, as there existed no natural obstacles to its successful cultivation here, he had sent to China for seed, and intends to commence growing it in the ensuing spring.

Indeed, there is scarcely a fruit or a plant, a shrub or a flower, a mineral or a vegetable of which any land can boast, but what is embraced in the limits of California, a "bright particular star" in the constellation of States, the crowning gem in the tiara of freedom. It needs but encouragement to develop her exhaustless resources. Agriculture is the greatest and most important, as it is the first occupation of man. Manufactures, arts, science, commerce, invention all follow in her train. It is for the purpose of encouragement to the farming as well as the horticultural interest, that we have here assembled, and this silver goblet, equally creditable to him who gives and to him who receives, I am requested by Mr. Shelton, the giver, to present to you Mr. Horner, as a premium for the best variety of vegetables and grains, and as a testimonial of his, and our, and the public appreciation of your persevering and successful efforts here in the great and noble field of agricultural and horticultural industry.

In your case we have seen, while the public mind was absorbed by the irresistible maelstrom of the gold mania, a single individual in four years even more successful in developing the agricultural, than others the mineral wealth which slumbers in the bosom of our soil, under peculiar disadvantages, from want of proper implements, proper seeds, and sufficient manual help, at first aided by the labor of only three natives of the forest, till the teeming soil, in grateful return for her cultivation, yielded her riches, and in the fifth year, enabling you the present season, with the average aid of sixty co-laborers, to realize from 800 acres of land in the Santa Clara Valley, of

Potatoes,	120,000	bush.
Onions,	6,000	"
Table beets,	4,000	"
Turnips,	1,000	"
Tomatoes,	1,200	"

Barley,...	5,000	bush.
Pumpkins,	30	tons.
Solid headed cabbages,	108,000	
Chickens,	600	
Eggs,	1,200	doz.
Onion seed,	800	lbs.
Beet seed,	200	"
Cabbage seed,	100	"

and thus, at a cost of about $50,000, producing a crop worth at present prices some $200,000.

After the reading of the deeply interesting papers from the Western World Institute, on motion of Henry Meigs, seconded by President Tallmadge, and others, the thanks of the Farmers' Club were unanimously voted to Mr. Williams and to the Institute. The unequal size of many of the California vegetables excited great surprise and pleasure among the members.

President Tallmadge proposed blue vegetable dye, as the next subject for discussion. Unanimously adopted.

The Club adjourned.

At a previous meeting of the Club, Dr. Antisell is erroneously made to say, "that there is no ammonia in the dung of a cow." This every one knows to be an error. Dr. Antisell did not say so, of course. H. Meigs, *Secretary*.

American Institute,
Farmers' Club, *Jan*. 20, 1852.

Rev. Joseph Carter, of Brooklyn, in the Chair, Henry Meigs, Secretary.

The Secretary read the following paper prepared by him:

LASTEYRIE'S TREATISE ON PASTEL OR WOAD.

[Translated by H. A. S. Dearborn, 1815.]

Indigo had been, for the last century and a half, the only blue dye, and a substitute for it was wanted in France, for the foreign supplies were greatly diminished by the war. Napoleon offered high premiums for the discovery of some indigenous substance which might supply its place. Inquiry was universally excited, experiments tried on a variety of plants, and from the researches of the savans, it was ascertained that pure indigo could be extracted from Polygonum-Chinense, barbatum, aviculare, fagopyrum, buckwheats, galegatinctoria, hedisarium, cicevarietinum or common ashes, the *chick-pea—lucerne*, scabiosa succisa or devil-bit, vaccinium myrtyllus, robinia caragana, a Siberian shrub, centauria cayanus, or blue bottle, genippa-Americana polygona, or milk wort, sophora tinctoria, spilanthus, acerubrum, or a species of the maple, lotus corniculatus, or bird's foot trefoil, or milk-vetch, lignum nephriticum, guilandina moringa, a wood of South America, inula helenium or elecampane, cica, Chilidonium magus or common celandine, quercus oak, or the heart of various species of the oak, sambucus nigra and ebulus, coronilla fruticosa, agaricus campestris, or mushroom, cestrum-tinctorium or lichen, numerous species, dolichos-lablab, or Egyptian kidney bean, and isatis-tinctoria or pastel-woad, The latter was found to yield the greatest quantity of coloring matter—could be cultivated all over France—required less trouble and expense in the culture and preparation than any other plant, and dyed as beautiful, deep, and as permanent a color as the best India indigo.

Joel Barlow, then minister of the United States at Paris, was deeply impressed with the importance of the cultivation of woad to us, and therefore transmitted these publications to one of his friends in Connecticut, who loaned them to General Dearborn, who translated them.

General Dearborn presented a copy of his treatise on woad to H. Meigs, who gave it to the Institute. The General has planted about one hundred of the seeds in drills, and in the second year gathered three bushels of the seeds from the plants. The plants were not injured in the least by remaining in the ground through the winter. They started early in spring, and their seed-stalks were grown many inches before grass had even sprouted.

At the meeting of the New-York Historical Society, on the 13th of January, instant, W. E. A. Hopkins, Consul of the United States in Paraguay, gave very interesting information as to that region and South America in general. For the present purpose, we are happy to quote him as to dye-stuffs: "There is an immense variety; besides the cochineal, there are two distinct kinds of indigo, vegetable vermillion, &c."

It is unnecessary to say that the discussion of this question, proposed by our president Tallmadge, is of great importance, as leading to the growth and manufacture of the indispensible blue dye to our great country. R. L. Pell, being called upon by the chairman, replied.

The subject is one of very great importance, though at the present time seldom practiced in domestic economy. If the Club will permit me, I will endeavor to explain some of its general principles.

It is known that in all ages brilliant colors have excited universal admiration, even among uncultivated tribes of savages, gay colored feathers have always been sought after and used for decorations.

The origin of producing colors by artificial means is of very great antiquity. Moses speaks of scarlet, red, and blue dyed stuffs. The Greeks practice it extensively, scarlet was particularly esteemed by them. Royalty was only allowed to wear purple. Their famous purple dye was called Tyrian, which was extracted from a Mediterranean shell fish, of the murex species, in very minute quantities, consequently the garments dyed with it were very valuable. The Romans likewise placed a high value on that color, and would only permit dignitaries of the highest rank to wear it. Their colors were inconsiderable, and the art of dyeing progressed slowly until modern times, when the application of that most desirable of all modern sciences, chemistry advanced it rapidly to a degree of perfection formerly entirely unknown.

Among the numerous substances capable of coloring cloths, but a very few have sufficient affinity for them, to answer the purposes of dyeing of themselves.

We must except indigo; after which the dyer is not possesssed of a dye that I know of, that will color so permanently, that water will not discharge it.

This apparently insurmountable difficulty has been overcome by an ingenious contrivance. Simply by immersing the cloth to be dyed in certain prepared substances, which makes the dye permanent, that, without the use of this preparation, would become fugitive. This bond of union between the dye-stuff and the cloth has received the appellation of mordants.

The term mordant (from the Latin word *mordere*, to bite,) is applied to certain substances, with which the cloth to be dyed must be impregnated. The red color given to cotton by madder would not hold, unless the cloth had been previously steeped in dilute salt of alumina. The cloth decomposes the salt of alumina, and combines with a portion of alumina. The red coloring principle of the madder, possessing an affinity for the alumina, combines immediately with it, consequently, the alumina is held by the cloth, and the coloring matter by the alumina, thus the dye becomes fixed. The same color may form various dyes, by changing the mordants. If, for example, you color with cochineal, and use the aluminous mordant, the cloth will become crimson; if oxide of iron is used with it, black is produced. These mordants are composed of earths, tannic acid, and metallic oxides.

That most generally made use of is alumina, either in the form of common alum, or acetate of alumina. Alum is composed of potash, alumina, and sulphuric acid. Nearly all the metallic oxides appear to have an affinity to cloth. However, the oxides of iron and tin are the most used as mordants.

When the oxide of tin is employed, it is in the state of protochloride and acetate of tin. By this means alone can scarlet, the brightest of all known colors, be produced. Tannic acid from nutgalls and sumach has a strong affinity for cloth. Oil is frequently used for dyeing linen cloth, &c. Cloth intended to be dyed, should first be made perfectly white, as colored materials will invariably interfere more or less with the dye.

Colors are either simple or compound. Among the simple may be classed blue, yellow and red—neither of these can be produced by mixing sundry colors together. On the other hand, compound colors may be made by mixing colors together in proportions. Purple may be formed by mixing blue and red; orange, by mixing yellow and red; green, by mixing blue and yellow.

It is important in dyeing, that the water made use of should be pure. Earthy salts in water have a serious effect upon colors, sufficient to prevent them from combining with cloth. Water that possesses no taste is the best. In dyeing blue, the coloring matters generally employed are woad and indigo. Woad is a biennial plant, growing wild in many parts of England. The ancient Britons are said to have painted their bodies with the blue colors obtained from it. The natural plants are less smooth, and not by any means so luxuriant as the cultivated ones. The root of this plant is tapering. The stem grows to the height of two feet, is slightly glaucous, and panicled at the top. The radical leaves are crenate, and those of the stem sessile. Panicle of compound racemose branches, covered with lanceolate leaves, all of a yellow color and likewise the stalks.

When cultivated in rich earth, and kept entirely free from weeds, it becomes a large plant, with very fine bluish-green leaves, branching stalks, covered with multitudes of flowers; the seed is oval. When the leaf is full grown, firm, juicy, and presenting a fresh, fine green, it is fit for gathering, and should be plucked at once and sent to the mill. The farmer must then prepare for his next crop, as it yields several in the course of the year. It will stand for some years, and continue to produce, but should be renewed every second year. An acre will grow one ton. It is raised from the seed. In dyeing wool blue, woad and bran are used as ferments, and lime as a solvent of the green base. Woad contains coloring matter similar to indigo, but not in such a large quantity.

When cloth is to be dyed in a woad vat, the bath should be stirred two and a half hours before it is immersed; it must be prevented from coming in contact with the sediment at the bottom of the vat by means of a netting.

When wool is to be dyed a netting is fastened over as well as under it, to prevent it from coming in contact with either the top or bottom. After being kept in the vat a proper length of time it should be wrung and exposed to the air, when the green color it has imbibed in the vat will be changed almost instantaneously by absorbing the oxygen of the atmosphere.

Indigo, a corruption of indicum, India, and gero, to bear. This is an extensive genus, a beautiful plant. Annual and biennial kinds are raised in hot-beds from seed sown in the spring. The flowers resemble somewhat the pea, sufficiently so to class it with the order Leguminosæ; the vexillum is emarginate; the keil has a subutate spur on both sides; stamens diadelphous; style, filiform; legume, continuous; more than one-seeded; two valved. The cærulea produces the best indigo, the argentea, from Egypt, one of the most inferior. The indigo tinctoria not only yields indigo, but is used in medicine. The indigo is considered a cure for liver diseases. All indigo plants contain a green fecula, which when in the green state, is soluble in water; it attracts oxygen with immense rapidity from the atmosphere, assumes a blue color, and then becomes insoluble. Indigo was known a long time in India as a dye, and was brought from thence to Europe by the Dutch. It is exceedingly valuable for dying, and has a strong affinity for linen, cotton, silk and wool. Every variety of cloth may be dyed with it, without requiring any mordant, the color produced being permanent. There are two ways of dyeing with indigo—one dissolved in sulphuric acid, forming sulphate of indigo; with this silk and wool are dyed. The color given is very beautiful, and is called saxon blue. To form this dye, one part of indigo is dissolved in four parts of concentrated sulphuric acid; to the solution is added one part of dry carbonate of potash, and this is diluted with eight times its weight of water.

The other method is to deprive the indigo of oxygen, from which it obtains its blue color, this reduces it to a state of green fecula after which it must be dissolved in water by means of alkalies, which act upon it at once in that state. If green sulphate of iron, lime and indigo are mixed together in water, the indigo loses its blue color, becomes green and is dissolved. This soluble is used in dyeing linen and cotton. Another method is to mix indigo in water, with proper vegetable matters, which will immediately ferment; while this is going on the indigo is deprived of its oxygen, and may be dissolved with quick lime. This preparation is used for the purpose of dyeing silk and wool.

Indigo is divided into several sorts, called first, second, third, fourth and fifth; the 2d, 4th and 5th sorts, are annual plants, and must be sown in a hot-bed early in the spring, transplanted into pots when two inches high, and then plunged into a hot-bed of tanners' bark. The second and fourth sorts are promiscuously used to make the indigo. The second is the sort cultivated in America, this is the same cultivated by the French, and called in commerce Guatimala Indigo. A species similar to the 3d sort of India grows well in South Carolina, and was much esteemed some years since, for the beauty of the commodity it produced.

The plants are slender and thinly garnished with foliage, consequently they furnish but a small quantity of indigo. The process of making indigo is simple. The vats intended to receive the plant are three in number; one placed above the other in form of a cascade, so that the second which is lower than the bottom of the first, may receive the liquor contained in the first, when the holes in the bottom are unstopped, that the third may in its return receive what is in the second. The first is called the steeper or rot; the second is called the battery, and should be half as large as the first. The third which is still smaller is called the deviling or settler.

In the first, the plant is laid to steep, and ferment, when it soon presents the appearance of rotten manure; immediately after the salts and substance of the leaf and rind are sufficiently diffused in the water by the fermentation, which has been excited by the heat and ripeness of the plant, it is drawn into the second vat, where it is agitated, and shaken and beaten, until the salts of the plant, with which the water is loaded is coagulated, and throughly united with it. It is then allowed to run into the third, where the particles composing the dye are formed. These are collected, placed in small bags, and then into boxes for commercial purposes.

It has been shown that indigo is composed of the salt and substance of the leaves, and rind of a plant of the same name; so that we may, with propriety, say that it is a dissolution of the plant, caused by the fermentation it has excited in the water it was laid to steep in.

This plant requires a good, rich, well pulverized alluvial soil, which it impoverishes exceedingly. The seeds may be sown one foot apart in the row, and the drills placed two feet apart, and kept clean by means of a cultivator. Quantities of indigo have been sent abroad from the south; but in consequence of pouring lime water into the fosces of the plant to make it subside, they injured the indigo to such an extent, that it was found difficult to dissolve it. They likewise sowed their seed too thick, which caused the plant to grow spindling, and devoid of succulent green leaves. They permitted the plant to stand too long before it was cut, consequently, but a small portion was dissolved by fermentation, and that not half as beautiful as the fosces of the young and luxuriant plant. It should be cut just before the flowers come out into blossom, to make indigo worth $1.40 per pound; that cut at a later period will make an inferior article, worth about thirty cents. It should not on any account, be cut immediately after rain, but during dry weather.

Frequently it is steeped too long: a practical indigo manufacturer can discern by the smell of the liquor, when it is in the proper state to draw off; sometimes it is ready in six or seven hours, at other times from twenty to twenty-four hours will be required, owing probably to variation in the atmosphere. This is the point necessary for the operator to attend to, and if he does not understand it, his loss will be inevitable. Another point requiring particular attention is the beating process, which is seldom in this country continued sufficiently long to precipitate all the green particles; that portion remaining is soluble when coming in contact with water, and is consequently lost. The best indigo ever made in the United States was manufactured by Gen. Hampton, of S. Carolina—with him we lost the secret.

Prussian blue is a splendid intensely dark-blue pigment, which was discovered in 1710, by a Prussian chemist, accidentally. It is a combination of persulphate of iron, and ferrocyanuret of potassium. The ferrocyanuret of potassium is made by burning carbonate of potassa with hoofs, dried blood, or horns, in an iron vessel; which form cyanuret of iron. The soluble portions are then taken out with water, and sulphate of iron added, until the Prussian blue will no longer be decomposed by the potassa. The ferrocyanuret of potassium is then set to crystalize, when truncated octohedral yellow crystals are obtained, called prussiate of potash. There is a process of dyeing a magnificent blue with this material, that does not suffer by exposure to atmospheric air in all its vicissitudes, acids even do not injure it; and boiling in alum-water has no effect upon it.

Our importations of indigo are large. On the first of January we had a stock of India, numbering 30,332 chests. We have received, during twelve months, 7,838 ceroons of Spanish indigo.

Mr. Geo. S. Riggs:

Herewith I furnish tables compiled by me from Government works. They show—

The imports of indigo from 1st Oct., 1829, to 30th June, 1850,	22,490,859 lbs.
Value,	$18,618,379
The exports (of foreign growth) from 1st Oct., 1829, to 30th June, 1850,	3,272,833 lbs.
Value,	$4,025,048
The exports (of home growth) from 1st October, 1829, to 29th June, 1830,	10,663
Value,	$7,229

Imported of growth and manufacture of foreign countries.

				Pounds.	Dollars.
From 1st Oct.,	1829,	to 30 Sept.,	1830,	617,824	715,715
"	1830,	"	1831,	803,252	759,012
"	1831,	"	1832,	1,114,827	978,179
"	1832,	"	1833,	1,140,454	986,402
"	1833,	"	1834,	921,894	999,863
"	1834,	"	1835,	935,675	893,090
"	1835,	"	1836,	1,236,902	1,113,577
"	1836,	"	1737,	837,850	868,213
"	1837,	"	1838,	401,524	363,406

				Pounds.	Dollars.
From 1st Oct.,	1838,	to 3th Sept.,	1839,	1,168,761	1,171,644
"	1839,	"	1840,	1,126,334	1,121,701
"	1840,	"	1841,	1,350,037	1,159,887
"	1841,	"	1842,	969,597	749,505
"	1842,	to 30th June	1843,	537,618	476,201
From 1st July,	1843,	"	1844,	1,391,708	1,145,067
"	1844,	"	1845,	1,131,256	862,700
"	1845,	"	1846,	1,292,877	898,518
"	1846,	"	1847,	985,702	694,956
"	1847,	"	1848,	1,534,244	961,849
"	1848,	"	1849,	1,373,062	805,863
"	1849,	"	1850,	1,619,461	903,031
				22,490,859	$18,618,379

Exported, of growth and manufacture of foreign countries.

From 1st Oct.,	1829,	to 30th Sept.,	1830,	334,624	440,863
"	1830,	"	1831,	238,218	278,997
"	1831,	"	1832,	303,108	358,526
"	1832,	"	1833,	532,422	629,369
"	1833,	"	1834,	647,322	857,056
"	1834,	"	1835,	78,308	96,619
"	1835,	"	1836,	161,570	228,530
"	1836,	"	1837,	252,544	343,640
"	1837,	"	1838,	17,761	24,961
"	1838,	"	1839,	47,365	65,975
"	1839,	"	1840,	132,048	179,210
"	1840,	"	1841,	29,149	106,291
"	1841,	"	1842,	94,624	90,865
"	1842,	" June	1843,	117,202	121,987
From 1st July,	1843,	"	1844,	7,098	7,709
"	1844,	"	1845,	88,263	94,686
"	1845,	"	1846,	28,860	34,364
"	1846,	"	1847,	3,579	8,201
"	1847,	"	1848,	78,281	26,641
"	1848,	"	1849,	23,116	21,005
"	1849,	"	1850,	17,371	14,565
				3,272,833	$4,025,048

Exported, of growth and manufacture of United States.

				Pounds.	Dollars.
From 1st Oct.	1829,	to 30th Sept.,	1830,	1,140	827
"	1830,	"	1831,		
"	1831,	"	1832,		
"	1832,	"	1833,	300	180
"	1833,	"	1834,	102	148
"	1834,	"	1835,	1,031	1,060
"	1835,	"	1836,	1,065	1,020
"	1836,	"	1837,		
"	1837,	"	1838,	50	50
"	1838,	"	1839,		
"	1839,	"	1840,	209	209
"	1840,	"	1841,		
"	1841,	"	1842,	2,200	1,042
"	1842,	" June,	1843,	208	190
From 1st July,	1843,	"	1844,	2,500	1,176
"	1844,	"	1845,	100	70
"	1845,	"	1846,	90	90
"	1846,	"	1847,	25	10
"	1847,	"	1848,	1,150	1,100
"	1848,	"	1849,	493	49
				10,663	$7,229

The Chairman requested Dr. Antisell to give his views of this subject.

Dr. Antisell observed that indigo was a plant of a temperate climate; grows wild in Mexico, on grounds elevated about six thousand feet above the level of the sea. Indigo certainly does injure the soil; but so also do other plants—perhaps not so much. The sap of the indigo plant is without color when in full growth; but the indigo begins to be formed as soon as the process of decomposition takes place in the leaves and stems, and is deposited in the cells of the plant. Like madder, it requires lime in the soil. Add plaster (sulphate of lime) to the soil; the leguminosa need it. It is desirable that the indigo plant should have large leaves and stems. Like tea, the first leaves that are gathered are the best; the subsequent growths are less and less rich in the indigo. The process of dyeing is in some measure an imitation of the process of nature; that is, to change the colorless sap by oxidation. Woad is far less sensible to cold than indigo. Great care is requisite in the fermentation of indigo, or great loss is found in the material and quality. There are five colors in the indigo plant, some of which must be got rid of. Indigotine is now prepared in order to produce the finest and richest blue.

Chairman.—The public is indebted to those citizens who give their time and care to spread knowledge, for in doing so they give valuable instruction to thousands who cannot attend lectures or pass their time in libraries.

Mr. Van Wyck stated that after the very able dissertation we had just heard on the subject, and the practical and very useful remarks of Professor Antisell, as a chemist, in relation to vegetable dyes, and colors generally, I cannot expect to throw much light on the matters for discussion. I would have wished, also, that our President, the proposer of the question, could have been present, that we might have had his views on it, as no doubt he had given it some attention, and would have assisted us materially in developing some of its more intricate points. It contains many of these, and requires considerable research, as well as professional skill to elucidate them to make them of much public use. The best vegetable blue dye used at this day, according to the best information I have been able to collect, is undoubtedly indigo. This grows abundantly in various parts of the world; but the best is grown within or near the tropics, from twenty to thirty-five degrees. It is grown in the East Indies, China, Hindostan, Java, and South America. It grows perfectly well in some of our Southern States, especially South Carolina. Some of the best kind comes from Guatimala, South America. Java grows the article very fine. In most of these countries it is only used as an article of commerce or trade. Europe is the place where there is the greatest demand for it,—England, France, Germany, &c., &c. In most of these countries it is only used as an article of commerce or trade. In all these, population is dense; their manufacturing establishments large, produce of these great; and they have arrived at the greatest degree of perfection, especially in woolens, silks, &c.; and, of course, the best coloring matters for these. The French, it is generally allowed, excel in dyes. They are considered among the best chemists of the world; this gives them great advantages in investigating colors; the best materials for making these bright and durable. Fourcroy, Bergmann, Berthollet, Chaptal, and many others, stand high as chemists, and in experiments made upon dyes. This, with some other matters, has given the French products, in which the coloring material is used, such great reputation in the world. In giving woolen and silk the blue color, they make use of indigo mostly, although, sometimes, they use several other things with it, according to the shade of blue, the material to be colored, the conveniences for performing the work, vats, steeping, washing, airing, &c.—the time used in these various operations. The workmen and laborers do not always work as they are told, which affects the color much, and immediately this must be corrected at once, or counteracted by other influences.

The French chemist sees if any thing has gone wrong and he sets himself to work without delay to correct it, and such is his acuteness and skill in the art, that he generally succeeds. In Germany there are also some good chemists and dyers. The Prussian blue stood high once, it is not much used though now. Dr. Bancroft, an English gentleman who stands high as a chemical experimenter in colors, made considerable improvements in Prussian blue. By his method it was made bright and deep, and not so subject to change and show different shades, still it was apt to show creases, dust and change in the seams to a whitish color by wear and use—the least touch of alkali made an ugly spot. The Saxon blue is considered an excellent blue; the color is formed with indigo and dissolved in sulphuric acid; this is according to the French with some changes in detail. It is sometimes called the chemical blue of Pœner, as he gave the directions as chemist. It has been said, and correctly, that indigo was an exhauster of soil, and therefore it was hoped its cultivation would be entirely dropped. It is not here thought so; other plants are exhausters too; manure is used to restore the exhaustion, and it may be in the case of indigo It is true, there is no great demand for it as yet, we look to foreign countries for the results of its use, it is believed, though, the time will come, when our population gets dense and manufactories more established among us, there will be a demand for all that is raised and so as to pay our growers The plant grows wild in Pennsylvania, and other middle states, but of an inferior character, still it gives the blue color; it is styled by competent persons who have examined it, wild indigo, or *dyers' baptesia.* It is necessary for those who superintend the process of coloring to be good chemists; this is the reason why the French succeed so well in the business. They watch with intense care every stage of the operation, and are often obliged to use several other ingredients; sometimes they use woad with indigo to give a good blue, almost always sulphuric acid to dissolve the last in. According to circumstances they use more or less sulphate of iron, oxide of iron, carbonic acid, the alkalies, lime, potash, soda and oxygen; they make great use of this last, they get it from the atmosphere—and great use of lime in various quantities. These learned operators must often counteract one ingredient by another when too much has been used of one, or improperly used in any way, so as to keep up the proper proportion of influence among them all, to effect in the final result, the most uniform, permanent and brightest blue.

Dr. Antisell.—One great advantage in the indigo dye is, that it is good for all textures. Prussian blue is not, for it is apt to turn pale and of a greenish hue on silk and cottons, while indigo blue is always beautiful. The indigo plant does grow wild in this country.

The Secretary read from the Boston *Journal* of the 15th of January instant, sent to him for this Club, an account of the formation of the "Massachusetts Board of Agriculture," by delegates from many agricultural societies of the State. An executive committee was appointed consisting of the Hon. Edward Everett, John W. Proctor, J. H. W. Page, Professor Fowler, of Amherst, and Hon. B. V. French, of Braintree. In the report they ask for a State Department of Agriculture, and a National Convention for agriculture, for correspondence with all agricultural societies, and for some system of agricultural education. The members of the Club were unanimous in their high approbation of this measure.

The Secretary read the following papers translated and prepared by himself.

There are soils so rich in silicates, prone to disintegration, that every year, or every two years, a quantity of silicate of potash is rendered fit for assimilation sufficient for the formation of the leaves and stems of a whole crop of wheat.

In Hungary there are large districts of land on which, since the memory of man, corn, wheat and tobacco have been cultivated in alternate years, without the restoration of the mineral ingredients carried away in the corn and the straw. There are other hills, on the contrary, which do not yield sufficient silicate of potash in two, three, or more years.—*Liebig*, 1843.

H. Meigs. We extract the following from the exhibition of the Central Horticultural Society of the Seine, on the 11th, 12th and 13th of September, 1851:

AMERICAN PRUNES.

[Revue Horticole, Paris, October, 1851.]

Messrs. Jamain & Durand obtained the principal honors in pomiculture. These two able nurserymen exhibited to us a complete collection of prunes of the most celebrated kinds, and among them was the famous Jefferson prune of the United States, which the English and the American horticultural journals announce as a rival to our Queen Claude prune. The Coe's Golden Drop, the Tellembay, Queen Victoria, and Pond's seedling were much admired, especially the latter, for its great size.

TRANSPLANTING LARGE TREES.

[Revue Horticole, Paris, December, 1851.]

It often happens that we are obliged to sacrifice large trees, whose place is wanted for other purposes, and yet we fear to transplant them and lose our labor by their failing to live.

And we have hesitated setting out large trees, which we wish to have on our places for ornament and for shade, for the same reason. We now believe it to be our duty to communicate to our readers the process which we have used with great success with trees of large dimensions. The process is simple and costs but little.

Last November we transplanted one hundred poplars, from thirty to thirty-five feet high, without taking off any part except dead wood and useless twigs. I put them in well-stirred earth, and merely digging at the roots of each tree a ditch large enough to receive a drain tile of three or four inches in diameter, and about three to four feet long, inclined from the surface of the soil to the centre of the roots. When spring comes, I pour water down these drains, to keep the roots moist constantly. The trees all go on to vegetate perfectly. I continue this watering during the first summer, and I find in the following autumn that new growths are on all of them, to the extent of four to five feet. I succeed in the same way with large lilac bushes and others. The results have been as satisfactory as possible. Not one of my transplanted died.

(Signed) LEON LE GUAY.

STAINDROP FARMERS' CLUB.

[London Farmers' Magazine, Nov., 1851.]

We extract the following on the potato:—"A native of South America, supposed to have been brought from Virginia to England by the colonists, sent out by Sir Walter Raleigh in 1584, and who returned in 1586, and "probably," according to Sir Joseph Banks, "brought with him the potato."

Gerarde, in his Herbal, published in 1597, gives a figure of the potato under the name of the Potato of Virginia whence, he says, he received the roots; and this appellation it appears to have retained, in order to distinguish it from the Batatas, or sweet potato, till the year 1640, if not longer. It appears from Gough's edition of Camden's Britania, that the potato was first planted by Sir Walter Raleigh, on his estate at Youghal, near Cork, (Ireland,) and that it was cherished and cultivated for food in that country long before its value was known in England; though it was soon carried over from Ireland to Lancashire. Gerarde, who had this plant in his garden in 1797, under the name of Batata Virginiana, recommended the roots to be eaten as a delicate dish, not as common food. Parkinson mentions that the tubers were sometimes roasted and steeped in sack (dry Lisbon wine,) and sugar, or baked with marrow and spices, and even preserved and candied by the comfit makers. In 1663, the Royal Society took some measures for encouraging the cultivation of the potato, with the view of preventing famine; but no high character was bestowed upon them in books of gardening published towards the end of the 17th century. A hundred years after the introduction of the potato, they are spoken of rather slightingly.

"They are much used in Ireland and America as bread," says our author, "and may be propagated with advantage to poor people. I do not hear that it hath yet been essayed," says another author, "whether they may not be propagated in great quantities as food for swine or other cattle." Even Evelyn seems to have entertained a prejudice against them. "Plant potatoes in your worst ground; take them up in November for winter spending; there will enough remain for stock, though ever so exactly gathered:" this was said in 1699. The famous nurserymen, London & Wise, did not consider the potato as worthy of notice in their *Complete Gardener*, published in 1749; and Bradley, who about the same time wrote so extensively on horticultural subjects, speaks of them as inferior to skirrets and radishes.

It was nearly the middle of the eighteenth century before their excellent qualities were generally known in England. It is now almost generally that seed potatoes taken up before fully ripe never suffer from the disease. It is therefore desirable to procure seed from moorish or from elevated grounds, where the potato seldom gets fully ripe. We prefer to *plant whole potatoes of a medium size*, or if cut, to *plant the pieces immediately*.

Copy of letter from K. B., of Perth Amboy, New-Jersey, to Henry Meigs, Esq., of the Farmers' Club, dated December 16, 1851.

"*Dear Sir*—The ready interest you have ever shown in my several attempts to improve an old garden, encourages me to state an experiment I attempted the past year upon a large cherry tree that was planted sixty years ago, and for the past ten years has been condemned as fit for nothing but to shade the garden. It was ever full of leaf, but bore scarcely any fruit, and when it did was imperfect, and ripened prematurely. The tree is a late bearer, ripening in July; The fruit heart-shaped, large, and very dark red, of the Ox-heart species. It had stood so long in the midst of the garden, I could not bear to order the axe—it looked like an old friend in childhood. I had often studied my school lessons upon the branches, eat the fruit, and remembered faces there, now long since passed away!

"Turning over the leaves of the Horticulturist, I was prompted to try what digging and changing the earth might do, and my proceeding, I must premise, was anything but a scientific one. I first ordered the ground to be cleared and broken up, laying the main roots bare to about three feet all around from the trunk of the tree; then putting in three or four wheel-barrow loads of manure, fresh from the cow-yard; next putting in the same quantity of fresh earth from the road near a smoke house, from which refuse had often been thrown; this was worked in, adding some of the old soil, and for a top-dressing, a bushel of shell-lime, and the same of coal ashes mixed together was added.

"This was done in the fall of 1850. In the following spring the earth was turned over, and I added a bushel of ashes and lime. The result was beyond my expectations. The tree was one mass of bloom, and the fruit ripened fully and abundantly. I was obliged to have a sheet held under the tree and the fruit shaken down, and a pretty sight it was. A brother-in-law of mine was so delighted as to beg me to take a drawing of the fruit, saying he would have it lithographed, for he had never seen finer or handsomer cherries. This is encouraging, and this fall I have had the earth again well turned over, adding manure, &c., &c, and am making the like attempt upon some old pear trees—virgalieus and bergamots—that are diseased. They put out abundantly of blossoms and leaves; but as soon as the fruit forms, a sort of hard, black spot forms on one side; the fruit ripens prematurely, and not one ever had been of some eight or nine trees fit to pick up, much less to eat. Their leaves about that time will have a black spot, almost every one throughout the trees. Can you tell me what would be better than the mixture applied to the famous old cherry tree? I see many directions in the different papers, but none that satisfy me as suitable for a worn out garden; and with but one hand, I cannot undertake anything that requires much looking after or expense, interested as I am in everything that can be raised in a garden.

"If you wish to make use of the above imperfect account, I have no objections, except that you will be so kind as to withhold my name.

"And now, believe me, your sincere friend,

"K. B."

AMERICAN INSTITUTE,
Farmers' Club, Feb., 3, 1852.

Present twenty-three members.

Hon. James Tallmadge in the chair. Henry Meigs, Sec'y.

The Secretary read a letter from A. Williams, Esq., of Calafornia:

San Francisco, Dec., 31, 1851.

H. Meigs, Esq.—My dear Sir: I send you by to-morrow's steamer a little specimen of the Russian bald barley, raised here near the Bear river (an appropriate name for Russian productions,) which is said to weigh sixty-six pounds to the bushel. I would be pleased to have you try the experiment of its growing at the North. In an agricultural address recently delivered here, a beet was described as being *twenty-eight* inches in circumference, and weighing *forty-seven* pounds; but I sent to-day, or rather Mr. Shelton sends to Francis B. Hart, one *forty-four* inches in circumference, and weighing when dug *sixty* pounds. Mr. Hart will probably exhibit it as a *Californian monstrosity*, but *a large garden here was filled with such.* Your Institute is the appropriate place for their exhibition.

(Signed) A. WILLIAMS.

Mr. Williams is a life member of the American Institute, and has been one of its Vice-Presidents. Captain Barnard, of the Institute, caused the beets to be placed on the table of the Farmers' Club to-day; they more resemble stumps of trees than garden vegetables. The bald barley received from Mr. Williams is a splendid grain. The clerk of the Institute, John W. Chambers, weighed it in our Chondrometer, and it proved to be *sixty-two and a half pounds to the bushel.*

The best barley of the United States is from forty-eight to fifty-one pounds per bushel.

The Secretary read the following translation made by him:

[L'Allemagne Agricole, Industrielle et Politique.]

From Alexandre Vattemare. Germany, her Agricultural Industry and Policy: Journies in 1840, 1841 and 1842, by Emile Jacquemin, Member of the Carlo-Leopoldine Academy of Natural Science, Germany. Printed in Paris, 1842, at No. 22 Rue Coquilliere (Shell street.)

Extracts translated by Henry Meigs.

Preface. German agriculture has hitherto remained almost entirely unknown, and yet, however, it offers a vast and fruitful field of study for us, and which it is our interest to look into. It is certainly not my intention to propose German agriculture as an accomplished model for us; but I must say that we shall find much to borrow, and that it presents an ample harvest of facts worthy to be gathered by us. Numerous experiments followed by happy results, agricultural societies, congresses of economists, agricultural legislature, all these have come to a union in Germany, to give birth there to a distinct literature, which is sufficient to fill vast libraries, and which it is our duty to endeavor to know. Germany, by its regrowing industry, by the tendency of its policy to re-constitute the ancient German Unity, by the total reform in which it is now in labor, merits in the highest degree our attention.

Having lived there eighteen years and travelled much in it, I am enabled to know their manners and taste, and the character and intelligence of her people, and what the relations of the nations of which it is composed are in their respective governments. And it is not from the inside of a post-coach, or in large cities, that we learn a country. Germany has unhappily too often been studied that way. These unfortunate essays do not agree with my long, reiterated and impartial studies. I wish to dissipate illusions and to produce a small volume of positive and real utility.

Germany was first aroused from a dream of passed ages by the grand movement of nations around her, coming from the West, under the standard of Napoleon, and Germany has profitted more by it than all the other States of Europe. Recollect what she was hardly fifty years ago, and behold what she now is. What an immense progress in every thing!

I say that the continental system has revived German industry, hitherto paralysed.

I entered Germany by Rhenine Prussia, which is, without contradiction, its most beautiful Gate. Almost all the villages which presented themselves on my right, from the frontier as far as Aix-le-Chapelle, bore a strikingly graceful physiognomy, gaily seated in the midst of an abundant, fresh vegetation—the houses small, convenient, and almost entirely hid by leafy vines; each house with its little garden designed with good taste, and in the midst of all this a people vigorous and well dressed. The general aspect of the agriculture is smiling.

It is no longer that a few wealthy lords and rich farmers possess the land. Prussia on the Rhine is now divided into 11,215,-527 parcels, divided among as many families, whose members are workmen, or agriculturists and proprietors.

This extreme division of the land will astonish persons habituated to the calculation of agricultural wealth by the number of great farmers; and, above all, it will astonish England, whose land is possessed by about *six hundred noble families only.* Certertainly it is not an evil that land should be possessed by a great number of owners.

The parcels of land mentioned are, on an average, about one acre; but on the banks of the Moselle, only twenty perches (the eighth of an acre, or two city of New-York lots.) In the circle of Coblentz alone, they have made every year six thousand new parcels. There are parcels of meadows and of vineyards which pay a rent of only one pfenning (a liard) equal to the French farthing; so that the land is almost divided into dust.

This is, however, as it is in France, a melancholy state of things. Under such a system, what must become of stock and grain-raising? And the improvement of meadows becomes almost impossible. In the most fertile but most parcelled lands on the Moselle, the peasant is poorest—his poverty excels that of the peasant of the lands of Luneburg. On the left bank of the Rhine, especially in the circles of Coblentz and Treves, the lands are the most divided; generally the farms are about from eight to twenty acres each, worth, on an average, two hundred dollars an acre, and frequently two or three times that. In the four hundred and fifty-nine square miles of Rhenine Prussia, there are but four hundred and twenty-one proprietors, whose taxes amount to sixty dollars each. This gives to the owners the privilege of being chosen deputies of the province. After leaving the fertile plains of Treves, Cologne and Coblentz, and entering the mountains of the Eifel and the Hundstrüch, you find in the midst of this beautiful country a striking example of the want of intelligence in agriculture. In the mountains of the Eifel, the peasant, a *routiniere par excellence*, is behind modern improvements many centuries, and the fine example of his neighbors in the adjacent vallies does not affect him at all. He goes on with the habits transmitted to him by his ancestors, and if any one of these peasants venture to take a little step towards amelioration, he does it with desperate slowness.

There are in Germany two hundred and thirty-three agricultural, horticultural, pomological, vine, silk, bee, horses, cattle, &c., societies, the members of which amount to 466,000, more or less instructed, of whom a great number are very learned men, some able, practical men, and all of them with the most ardent desire to give progress to agriculture.

"We live (said the President, M. de Ellrichshaussen) in an epoch of reforms of a serious nature and of bold emancipations.

Agriculture, which has been asleep for ages, is now awakening, thanks to the progress of chemistry and the natural sciences; every thing having an intellectual origin shows, and is disembarrasing itself of those fetters which prevent its free development. Agriculture has been the last to answer to the call of science; but its turn has at last arrived, and it is now ready to commence receiving instructions which will cause it to make a rapid career. Is it not sure of being sustained by all the sciences of nature?

"There does not exist, as yet, a book which contains a complete history of the discoveries of Germany in the natural sciences.

"Glory to this industrious people! Glory to old Germany, and to every people who shall listen to, above all voices, that of science and reason!"

In the sterile district of the Eifel, and in other places, *lupin* has been extensively used to manure the land. It is said to grow well in barren land, and, being ploughed in before the seed is ripe, excels as manure any other green manure. This plant grows from two to three feet high, branches much, and usually yields forty seeds for one.

Notwithstanding we are so near to Germany, we (France) know nothing of the late mighty improvements in Germany.

The Agricultural Society of Kœnigsberg, as well as all of those in Germany, does not pass for a learned one: it avoids all that, for fear of intimidating the practical men, for the societies wish to profit by the knowledge of all. All are admitted, rich or poor, provided they are but honest.

The agricultural reform in Germany in the last fifty years, has principally operated on the meadows, or, to speak more generally, on the production of forage; but it has every where produced wonderful improvement in every department of agriculture and in the arts, and yet more in temperance, industry and health.

The coal region of Rhenane Prussia, is one of the greatest known—abundant for generations to come.

The metallurgy of the circle of Dūsseldorf is remarkable. Its workshops work up in one year fifteen million pounds of steel and twenty-four million pounds of iron. They make 500,000 swords, sabres, rapiers and bayonets; 600,000 dozen of knives and forks, and almost as many scissors. The blades of Solingen were already renowned during the crusade and the middle ages.

The manufactures of linen and woolen cloths are very extensive. The wines are well mentioned. The Rhingau is one of the most fertile, smiling, and beautiful spots in the world. This delicious garden is justly called the paradise of Germany. It is so protected from the north winds, that its climate is like that of Italy or Spain, has a rich and powerful vegetation. The vines grow from the valleys up the sides of the mountains—numerous forests of fruit trees—population full of animation. The wines of this happy region are celebrated. The Johannisberg flatters at once the eye, the smell, and the taste: the eye, by its fine, golden, yellow color, and by the pearls which mount through it; the smell, by its delicious bouquet, which causes you to drink it slowly; and what a delicious taste! The vintage of the mountain Johannisberg is fifteen days later than in any other part of the Rhingau. The first quality of the Johannisberg sells there at $2 a bottle, with the exception of the vintages of 1779, 1793, and 1801, which are worth from $5 to $6 a bottle.

The vineyard producing it, contains about sixty-three acres. It lies under the balcony of the Chateau, which is on the top of the mountain. Out of this vineyard not above two or three acres ever yield what is called there the first quality, the flower of the field. About a league distant from Johannisberg lies Mount Strahlenberg, celebrated for its famous Markebrunner. This wine, which owes its name to a spring which rises from the mountain, vies in strength, taste, and bouquet, with M. de Metternich's (the Johannisberg). Around the imposing ruins of the castle of the Scharfenstein, the terror of the old dukes of Mayence, extend noble vineyards, producing one of the most precious wines, most in request, and most delicious (the Grævenberger). Not far off lies the old Abbey of Eberbach, whose monks hardly knew the riches of their place; their Steinberg wine is now considered to be the best of all the wines of the Rhine, even the

Johannisberg. It has acquired is celebrity since the old abbey belonged to the Duke of Nassau; before that time the reverend fathers of the abbey took care to drink up the whole among themselves, suffering no profane wine to approach their lips. Leaving Eberbach on a fine spring morning, by a flowery path, we soon reach the small mountain Rauenthal, which also gives name to a famous wine. Soon after we reached the beautiful village of Geissenheim, almost a city however. The urbanity of its people is striking Here the hospitable Count of Ingelheim kept well furnished cellars—each cask or casks have a particular wine, with its title and age on the cask. The best wine of the village is from Mount Nodenberg, and from a garden called Kapellgarten. The Geissenheim is the habitual common wine of the people of Rhingau, Mayence, Weisbaden, and Frankfort. We reached Rudesheim, which owes its celebrity to Charlemagne, who looking one day out of a window of his Castle of Niederingelheim, was so much struck with the happy situation of Mount Rudesheim, on which the sun shone all day, that he determined to cover it with vines. He brought vines from Orleans, and soon clothed the mountain with their foliage. Afterwards two vineyards were formed from it, called Rottlænder and Hinterhaeuser. Near Rudesheim lies Bingen, celebrated for its Scharlacher, one of the strongest wines of the Rhine. Near this is Assmauhausen, yielding the only red wine in this quarter of the Rhine. We visited Hochheim, a mountain producing a wine on its summit, which is not surpassed by the Steinberg. The best Hochheim is from about eight acres, each bearing 4,100 vines. At Diedesheim, Forst, and Wachenheim, whose vines are generous, and most in demand of all the wines of the mountains of the Haardt. The villages of Leebach, Ungstein, and Kahlstadt, give excellent wines; that of Kahlstadt is red. Herxheim has a celebrated wine. Around one of the churches of Worms, called the Liebfraumitch, or milk of the Holy Virgin, is a vineyard, giving wine like veritable nectar. We find very fine wines at Dienheim, Oppenheim, Nierstein, Bodenheim, Laubenheim, and others. Pardon this litany of *heims*.

Prussia had, in 1835, about 72,000 acres of vineyard. Wurtemberg, Saxony, and many other districts of Germany, have the practice of distributing grafts and cuttings &c. of the best fruits, seeds, plants, and elementary treatises on gardening. Every village in the Duchy of Nassau has a nursery of fruit trees under the care of an elementary school. The government aids in giving the greatest extension to these nurseries and pleasure gardens. The peasants call these establishments Model Gardens. At the proper season there is an extensive distribution of seeds, plants, grafts, &c., of all the most precious kinds.

At the Congress of Economists, held at Carlsruhe, on the 10th of September, one hundred and twenty members appeared—as many more are expected. The grand hall of concerts was occupied by the congress, and a numerous audience was in attendance; all Carlsruhe was there, and people from the whole of the surrounding village. Many of the Noblesse were present, and taking part in the deliberations—they came without their servants, as plain citizens. All their titles so long held go for nothing. They never know at the door who you are! but what do you know?

During the session, essays, treatises, pamphlets, papers, journals constantly arrived in crowds filling one Hall very soon, where each member, professor, cultivator, economist, director, of agricultural, commercial, of art, manufactures went. Mr. Schams, of Hungary, who is author of a most excellent work upon the grape vine, spoke of the necessity of establishing schools of grape culturists where all the best vines should be collected, and a system commenced to plant none of the numerous poor kinds, to collect all knowledge of the subject for distribution. Hungary has one, and France is beginning to dawn with the idea. The whole assembly applauded Mr. Schams. A national Fete-Champetre was held in the forest of Hartwald near the city, to which an immense concourse of people repaired—a joyous throng that filled the places where were orchestras, tents covering well served tables. I almost thought that I was in the Elysium fields of Paris, during the three days anniversary. Young men and women dressed in their finest clothing. A painter would have been greatly pleased to have the opportunity to copy in drawing their many graceful forms.

In the exhibition were specimens of every thing—enormous cattle, horses of rarest beauty, sheep with the richest fleece, sows that swept the ground with their numerous teats. In all cases *a male and female of each kind of animals.* They recalled the going of animals out of the ark of Noah. Every thing amimal, vegetable and mineral was represented here. It was a magnificent exposition of the riches of the country—no Roman triumph ever equalled this, I remarked a singularity I had never seen or heard of before. It was a lofty tower of scaffolding covered tastefully with branches of pine and fir, among which appeared all sorts of fruit, grain and vegetables—among them were enormous melons, superb grapes, apples, pears, prunes, wheat sheaves, beets larger than any I ever saw. In the city the commotion was as great. In the orangery of the Ducal Palace was another exhibition of products of industry, an immense collection, among them multitudes of paintings, statues, *models of fruits. All this awakening in Germany is due to a twenty-five years peace*! The task was noble, grand but difficult. Patriotism and generosity have played a great part in all this.

President Tallmadge called the attention of members to the stated subject of discussion. "The Preservation of Fruits and Vegetables in a fresh condition."

Mr. Pell being requested by the president to speak on the subject, said: Vegetables are organized bodies, capable of converting and assimilating extraneons matters into other compounds, and rendering them subservient to their development. In this manner they increase their bulk, and likewike cast off from their bodies germs which form other vegetable bodies, precisely similar to the mother plants. They are likewise governed by the laws of vitality, by which they are enabled to retain such matters as enter into their structure; this matter is exactly the same which forms animal structures. • The resemblance between vegetables and animals is so close that it almost impossible to find out the distinctive difference between them. Like animals, they are acted upon by the agencies of life, such as electricity, light, heat, moisture, air. Sap ascends from the earth into the tubes of vegetables, directly contrary to the laws of gravity, and the juices resist the laws of chemical decomposition until deprived of life, when they at once ferment, and return to elementary matters, of which they were in the first place decomposed. Although our varieties of vegetables is large, still, by acquiring a knowledge of vegetable physiology, we may much improve them. Our cabbages, cauliflower, broccoli, and numerous other excellent vegetables, may be almost considered as artificial productions, so much has skill aided their cultivation.

As decomposition in vegetables is induced by the free access of atmospheric influence it is obvious to every one that its exclusion is necessary, to as great a degree as possible, when the object is to preserve the vegetables for winter consumption. At five feet below the surface of the earth I do not believe the temperature varies, either summer or winter, and there it never freezes, except under very peculiar circumstances. Onions, turnips, carrots, potatoes and salsify, may be preserved for one or more years, by being buried in sand-pits, below the effects of frost, or where the temperature is equable.

It is proper to take up many varieties of vegetables before the hard frosts of winter set in; such for example, as leeks, cabbages, lettuces, cauliflowers, and sundry other kinds, all of which should be removed to winter quarters unfrozen, in dry weather, care being taken not to injure the roots, to which should, by all means, be left, the soil naturally adhering to them, as the spongioles and minute fibrous roots of carrots, parsnips, turnips, &c., continue to extract nourishment for a long time, enabling them to retain the vital principle; if these fibrous rootlets are lacerated and torn off, the juices make their escape through the injured surface, and expedite the saccharine fermentation, which soon thereafter passes into the putrefactive stage, and then the vegetables could not possibly be preserved, except by extraordinary means, such for example, as being packed in ice. The potato has become a difficult vegetable to preserve, owing to its proneness to decay. They may be kept in root houses, pits, &c., but if the quantity is not large, a dry cellar, where the temperature is never very low, and where the frost cannot possibly enter, is the best; even there they should be frequently overhauled, and

Digitized

all the decayed or decaying ones picked out, and the shoots of those remaining rubbed off. If frost comes in contact with them, it at once converts the starch into sugar, and the potato becomes sweet and unfit to be eaten by man. It is then in the proper state to be employed for the purposes of distillation into spirits. In Scotland they are used with barley. In London they are manufactured into bread by the bakers. The fecula is frequently sold there as arrow-root. It makes good starch, but is less nutritious than the potato, from the fact that the saccharine matter and albumen is separated from it. I sold during the past summer quantities of potatoes for bakers, for the purpose of being mixed with wheat flour for bread.

Cabbages may be preserved in various ways for winter consumption; many gardeners pull them carefully, and place the tops down and the roots up in the drill where they were grown. Others bury the roots, standing the cabbages close together, as deep as the first set of leaves, and cover them with straw or any such substance. By a few they are buried in the ground beyond the action of frost. They may be kept perfectly by freezing them in ice in the fall, and let them remain in that state all winter. This is one of our best, most wholesome, and nutritive vegetables, and supplies a very valuable mixture with the food of animals. They are supposed to contain an essential oil, which is said to produce bad effects when eaten by dyspeptic persons. This tribe of plants putrify rapidly under certain circumstances; and when they decompose produce an extremely offensive odor, owing, probably, to the nitrogen it has been proved by analysis to contain. The cabbage was known to the Romans, and was by them considered a delicious vegetable. They introduced it into Germany and Britain. Cromwell's soldiers carried it into Scotland, where for a long time it was the only garden vegetable they had.

The garden bean came originally from Asia. They may be pulled green, placed in a wooden tub, and covered with salt brine; by this simple process I am enabled to have beans all winter in the same perfection that I have them in the summer. The bean contains more nutritious matter than the generality of vegetables, eighty-four per cent. is nutritive, of which fifty per cent. is pure farina, the balance mucilage and gluten. Eaten with bacon, they form a delightful dish, as the farina of the bean naturally connects the oily part of the bacon.

Turnips contain but a small share of gluten, but a great deal of sugar. The quantity of nutritious matter in this vegetable is very small, only forty-two parts in a 1000. They are used all over this northern country; in a hot climate they become almost tasteless. They may be preserved in dry cellars, or pits in sandy soil; or if the soil is clay, it should be burnt before placing them in it. Sugar has been made from turnips equal to sugar-cane, and is considered by the Germans fine.

The Carrot.—When this valuable root was first introduced into England, in the reign of Queen Elizabeth, by the Flemish refugees, it was so much admired that the head-dresses of the ladies were adorned with the leaves of it. A pretty ornament may be made by cutting off the top of a carrot, and placing it in a shallow vessel of water. It possesses a large portion of sugar; for example, in a 1000 parts, ninety-five are sugar, and three parts starch; consequently much spirit may be distilled from them, say half a pint in every eleven pounds. They are used in the culinary department, and no better food can be given to horses and horned cattle. When you cut a carrot across you will find that it contains two parts; the external one red, and the interior yellow; the greater the proportion of the outer part in any variety, the more valuable it is. They must be carefully taken up in the fall, when intended for winter use, with the dirt adhering to the roots, and placed in dry pits beyond the reach of frost, or in dry cellars—the tops should be left on them.

Parsnips contain a large per-centage of sugar, and are capable of producing a good wine. In Scotland I noticed they were boiled, and mixed with mashed potatoes for children, who seemed to be excessively fond of them. They may be left in the ground all winter, as the frost appears to improve their quality very much; they are better in the spring after this treatment than in the fall. If they are taken up, however, they must be treated as directed for carrots. They have been grown in this country four feet long, and four and a half inches in diameter.

The *Beet* is an excellent vegetable. There are several varieties—among the leading may be named the blood beet, which can be preserved in pits or cellars during the winter. The white or mangel wurzel is principally used for cattle. Then there is a smaller kind, which is most extensively used in France for making sugar; from one hundred parts of the root they obtain nearly three pounds of refined sugar, equal, in their estimation, to the cane. More than half the sugar made use of in France, is obtained from this root.

Spinach is a delicious vegetable when properly cooked. It may be kept through the winter in the bed in which it has been grown; it will only be necessary to cover it slightly with straw.

The *Onion* is a favorite vegetable with all classes of people, and is enjoyed either raw or cooked. By the ancient Egyptians, two thousand years before the birth of Christ, it was worshipped. In mild climates, the flavor is much more delicate than with us; consequently the odor is not so offensive. However, those who are partial to them in their raw state, may eradicate the pungent smell by chewing raw parsely. It contains, by analysis, acetic acid, phosphoric acid, sulphur, water, and manna. When pulled in the fall, they must be spread thin upon the gravel walks of the garden, and turned daily, until perfectly dry, when they may be strung and hung up in a dry room or garret, until required for use.

Leeks, *beans*, *garlic*, *asparagus*, *seakale*, *artichoke*, and others of this description, may be preserved by means of vinegar, or salt and water—say four pounds of salt to a gallon.

Celery is a native of Great Britain, where it is found growing wild on the borders of ditches, in which state it has an acrid and disagreeable taste, and is unfit for table use; by cultivation it has become one of our finest and most delicate vegetables. It is usually covered with earth while growing, which makes it white and crisp; this is a proof that without the magnificent rays of the sun, every thing would be perfectly white. For winter's use I have it packed in large boxes filled with charcoal dust, or fine garden mould. When taken for table use, the roots are left behind; they directly throw out a new and tender growth, which later in the season, is very sweet and delicious. To obtain this result, the roots must be placed in the charcoal dust or earth, immediately upon being taken from their bed in the garden, and before the roots and spongioles are wilted, frosted, or dried. If preserved in the garden, they may be covered as they grow, or may be taken up, placed closely together, and covered thoroughly; in this manner they will keep until spring.

Pumpkins, *squashes*, etc., may be kept through the winter in any dry room, to which frost has no access.

Nearly all vegetables may be preserved to last for many years, by the following plan: pick them fresh from the garden, and if carrots, potatoes, beets, parsnips, turnips, &c., are among them, cut them in slices, clean the whole thoroughly, and place them in an oven, and dry them by a gradual heat, and do not permit them on any account to be scorched, let them be subjected to this heat until they become perfectly dry throughout, they may then be packed in dry casks, and transported to any part of the world.

The President requested Mr. Pell to proceed with his remarks in continuation from the last meeting, on the subject of dyes.

Of the vegetable colors, one of the most valuable, after indigo, woad, &c., is madder, of which there are two species, viz: rubia peregrina foliis quaternis, and rubia tinctorum foliis senis. The roots of the madder produce a different quality from the stalks, consequently they are separated. The best roots should be about the size of a quill, and almost transparent, with a slightly red color, and smooth bark. The coloring matter is capable of being rendered soluble by the use of alcohol, and by evaporation a splendid red color is obtained; alkali added to this makes a violet; sulphuric acid, a fawn color; and sulphate of potash, a red. This plant is herbaceous, throwing out several stems from one root, bearing small yellow flowers; from Smyrna it is exported whole, but from Holland in the form of a powder. The Turks frequently feed their stock with madder haulm. It affects the milk by coloring it red; it has the same effect upon the perspiration, and even bones of animals. It has been used medicinally in yellow jaundice.

Chay is a small biennial plant, resembling madder; it grows spontaneously on the sandy soils of the Coromandel coast, is slender, about two and a half feet high, and yields a dye of a very superior kind of an orange hue, chiefly found in the bark of the roots.

Although much used in India, it is not so valuable as madder. We have a plant called galium, growing wild in many woods in North America. Our Indians use it to dye porcupine quills, as ornaments for their slippers, boxes, and other Indian curiosities too numerous to mention. At all events, the dye is but little inferior to cochineal. The coloring matter is obtained from the roots. This same dye is used by the inhabitants of Scotland in dyeing their woolens a bright red.

The wood of Brazil is much used in dyeing. For this purpose, the heart of the tree only is taken. It is pale when first obtained, but by exposure to atmospheric influences it immediately becomes red. Its quality is known by its weight. It will not float in water, but immediately sinks to the bottom. The matter may be extracted by boiling it in water, but more advantageously if alcohol or ammonia is used. This tree gave the name of Brazil to the country. It is derived from bragio, a burning coal, to denote its deep-red color.

Camwood is a tree grown in Africa, and affords a red coloring dye of a fugitive character. Bar wood is likewise an African production, and is used as a dye, requiring the aluminous mordant.

Red Saunderus, used as a dye, is grown in Coromandel: the color obtained from it by alcohol is equal to scarlet.

Logwood is an East India production, sometimes called campeachy-wood, yielding a fine red, tinged with shades of yellow. Six quarts of boiling, distilled water will extract all the coloring matter contained in one pound of logwood-chips, and it will present a yellow color. If common water is used instead of distilled, the decoction will be blood-red: by adding to this oil of vitriol, the yellow color will come back. Magnificent purple may be obtained from logwood by a solution of tin. It is used for blacks, extensively, and different shades of gray, and not unfrequently with Brazil-wood. No coloring matter in use affords a more choice variety of dyes than logwood: they are rarely permanent, however. Cochineal is considered, very justly, the most valuable of all dyeing drugs, producing a superb scarlet-crimson and carmine. When America was discovered it was found in Mexico, and imagined to be the seed of some plant. It is an insect, known as the coccus cacti, and feeds upon the cactus opiuntia, commonly called the prickly pear. Two kinds are made use of in Mexico, known as grana fina and grana sylvestra; the first is large, and yields a large quantity of coloring; the other is small, and but little used. The insect is killed, and the dye extracted by immersion in hot water. Cochineal retains its coloring principle perfectly for one hundred and twenty-years. A variety of beautiful colors may be obtained from the coloring matter of this insect by mixing with it different mordants. By the addition of alum to a decoction of cochineal, carmine or lake is formed. Carmine has been made from kermes, (cocceus ilicis,) an insect found in Asia, and is a very ancient dye, not inferior to cochineal. The ancient Brussells and Flemish tapestries were dyed with kermes, and although the colors have lasted two hundred and fifty years, they are still brilliant.

In Poland they have a small round insect called Czerwiec, the coloring matter of which is used to dye silk, wool, horse hair, and the nails of the ladies.

Lac is an animal coloring matter, yielding a red dye. It is produced in the East Indies by a winged insect called *Coccus Lacca*. This insect deposits its eggs on the branches of a shrub called *Croton lacciferum*, and then covers them with this coloring substance, lac, which defends them from external harm, and affords food to the maggot as it advances in its strength. The natives of Assam, invite the flies to deposit their eggs, by besmearing the branches with substances grateful to them.

Archil is manufactured by pounding the lichen called *Rocella tinctoria* and forming into a paste.

I believe these are the principal substances made use of to produce red.

Dyeing yellow. Among the celebrated coloring substances, used for this purpose, may be named, first, quercitron bark, which is the middle coat of the quercus nigra, a tree of North America; this cellular coat is ground and dissolved in warm water; the extract is dried for transportation, and when used, the decoction may be darkened by the addition of alkalies, or made bright by the use of acids.

Weld (*Reseda luteola*) is cultivated in England, and is there commonly called yellow weed, or the dyer's rocket. The leaves, stalks and flowers are all used as a yellow dye. When in flower, it is pulled up, dried, and tied in bundles. It forms a more beautiful lemon-yellow than any other dye. It is a very exhausting crop, almost as much so as indigo.

Fustic is the wood of the *Morus tinctoria*, a large tree growing in the West Indies, and yields a color more durable than quercitron or weld, but one-third as much yellow coloring matter as quercitron. It contains resinous matter in combination with tannin.

Anatto is a dye obtained from the pulp of the kernel of the *Bixa orellana*, found growing in South America and other countries. A large quantity is exported from Cayenne in the form of cakes, packed in banana leaves. It is used in England to color milk, cheese, &c.; an ounce will color 200 pounds of cheese. In Spanish America it is put in chocolate.

All the yellow coloring matters named require some mordant to make them pernament. Alum is one of the best. Quercitron bark and weld produce nearly the same color. All the yellow shades of color may be dyed with quercitron. A mixture of yellow and blue makes all the shades between yellowish-green and dark green approaching black. Red and yellow mixed together form all the shades from scarlet to tobacco color.

Black. The substances usually made use of for this dye are tan and red oxide of iron. They have a very strong affinity for each other. Logwood is used as an aid, and adds much to the beauty of the black. To receive a perfect black, the cloth should be first dyed blue; and to every 100 pounds, six pounds of sulphate of iron, twenty-nine pounds of logwood, and six pounds of nut galls should be used. When dyed it is washed until the water passes off colorless,

Brown is a compound color, and is formed by combining walnut peels, the root of the walnut tree, sumach, and the bark of birch. The cloth to be dyed is boiled in a decoction of these substances, which produces a permanent brown color.

Calico printing, that so much surprised Herodotus, Strabo, and Pliny, is dependent upon the art of dyeing. The cloth is figured to suit the taste of the manufacturer, and the spaces within the figure, intended to receive the dye, are impregnated with a mordant—this mordant having an affinity for the dye forms a bond of union with it, and absorbs the dye so permanently that washing will not remove it, though it eradicates the stain from the unmordanted parts. This style of calico printing was practised in Turkey and Asia early in the day by means of blocks; and the goods were exported to other countries, and considered very beautiful. In the year 1676, calico printing was commenced in London, and in 1700 the importation of prints from China, India, Asia, and Persia, was prohibited, with the view of protecting home manufacturers, which has always been the policy of Great Britain, and to that policy she owes her present greatness. The dye stuffs principally made use of by calico printers, are weld, indigo, quercitron bark, red madder; these are mixed with numerous mordants, and thickened with either of the following substances; gum arabic, gum senegal, dextrine, rice, starch, flour, jalep, potato starch, &c.

The mineral colors used by dyers are—chromate of lead, which produces a very bright yellow; antimony orange, a red; arseniate of chromium, a green; subchromate of lead, an orange red; hydrated peroxide of manganese, a brown; prussiate of copper, a cinnamon color; arsenite of copper, a green—the color of grass; Prussian blue.

A piece of cotton cloth must go through seventeen processes before it is properly prepared for printing; and they are, according to Parnell—

1. Washing in cold water.
2. Soaking for eight hours in boiling lime water.
3. Washing in cold water.
4. Souring.
5. Washing.
6. Soaking for ten hours in a dilute solution of soda-ash.
7. Washing.
8. Chemicking.
9. Souring.
10. Washing.
11. Soaking in solution of soda-ash.
12. Washing.
13. Chemicking.
14. Souring.
15. Washing.
16. Soaking in hot water.
17. Squeezing and dyeing.

In almost every process of cloth dyeing, the color is applied by one of four processes.

1. From two solutions: the coloring matter not held by either separately, but produced by a mixture of the two. The cloth is first impregnated with one solution, and then with the other.

2. From the solution of the coloring substances which combines with the coloring matter, forming an insoluble compound.

3. From the solution of the coloring matter itself, the cloth having been previously prepared.

4. By a chemical alteration of the fibre of the cloth, with the formation of a colored product.

L. W. Tinelli, late Consul of the U. S. at Oporto, presented an onion of that quarter, of about one pound weight, of a beautiful complexion and balloon figure. It is of a fine quality, grows there occasionally to about five pounds weight. The Consul also presented and distributed some of the best quality lupins ever seen by the members; it is used there for manure, with good effect. He distributed also seeds of the onion.

Messrs. William Partridge & Son, importers of dye-stuffs, of 27 Cliff-street, presented samples of woad, teazles, Bengal indigo, German weld, a small broomy plant, making a very valuable yellow die. Terra japonica, a powerful tannin, formed by boiling chips of the heart of the tree Acacia Catechu, until the juice is inspissated and then coagulated. In 1824, some few tons of it were imported here from New South Wales, for tanners' use.

On motion, the thanks of the Club were voted unanimously to Mr. Tinelli, to Mr. Hart, to Mr. Williams, and to Messrs. Partridge & Son.

President Tallmadge said that our country is under deep obligation to such of our officers, representatives abroad, as well as to our merchants and the friends of American progress, for the presents of articles which are useful, and of which some may become in future, staple productions of our country. I examined the culture of woad in France, and there is no doubt it will flourish in our Southern States. Chemistry is invoked now in many works hitherto unknown, in agriculture and arts. Our public institutions are bound to aid the great cause, or fall back in the progress. Knowing well how indispensible to our country the principal dyes are, I proposed this discussion, and I am gratified to find that it has produced something for all readers which may stimulate many to extend present knowledge and make new discoveries. It pleases me much to find our fellow-citizens cooperating in this useful course. As to madder, it can be cultivated well anywhere almost in our country.

Mr. Van Wyck observed, that those vegetables which grow under ground like most of the roots, such as turnips, potatoes, beets, carrots, parsnips, celery, &c., preserved generally best by being buried under ground, if well done, in a dry place, and of sufficient depth to be safe from frost. This mode of keeping them is most congenial with their habits, such as germination, growth, and maturity, all take place under the earth; vegetables and fruits that do not ripen under ground, some of them keep very well being buried, apples for instance keep well, and some other fruits no doubt would—grapes I should think would not do so well, they are too delicate. This is one reason why vegetables keep well in good cellars, they are under ground, most fruits will keep well in cellars, with care, especially apples. Besides indigo and woad, that would encourage, as has been observed, both the agricultural and manufacturing industry of our country, there is madder; this has the advantage of the others, and especially indigo, it will grow well far north, and it is a first rate coloring material, it makes scarlet or red of the best kind. Indigo will only grow well near the tropics.

The subject of colors is quite important for our country, there is much nice learning relating to it, and which must be studied to understand it, this has been shown to day as well as on former occasions. The coloring material is also much used in the arts, another of the great departments of industry of the American Institute, our painters all use it more or less, portrait, landscapes, &c.

AMBROSE STEVENS.—Madder grows very well in the valley of our own Mohawk.

Prof. MAPES.—On the regular question—adverted to the methods and with some success, especially in France—of preserving vegetables by a slight cooking, and in hermetically sealed vessels. The attempts to preserve meats as well as vegetables on this plan, have proved in some cases perfect failures. Large quantities prepared here and sent to the Mediterranean, were all condemned. I have tried fruits in vacuo, but they proved not worth much; fruits have been buried in charcoal dust, saw dust, but if they keep their figure, they nevertheless lose flavor, so as to be of little worth. Pears have been well kept—some of them, as you well know, do not mature on their trees, but by proper keeping are made to ripen. Curtis, of Boston, keeps fruit long and well by a process which he has not yet explained.

There is a mode of making fruit jellies well worth knowing. I practise it, and will let the Club taste some of mine at the next meeting. The difficulty in making it is, allowing the juices to boil, by which means they soon pass into the condition of syrup instead of jelly. The true method is to warm the juices to the simmering point, then stir in the usual proportion of sugar; stir it perfectly, and we obtain the true flavor of the fruits, and a perfect jelly. My grape jelly is so made, and admired.

AMBROSE STEVENS observed that great attention is due to the condition of the fruit, in the first place; for, if it is deficient in maturity, or is over ripe, success in making good jelly from it is out of the question.

Judge LIVINGSTON presented Catawba grapes off his farm, in good condition, preserved by him in oak saw dust.

Pres. TALLMADGE invited the members to prepare subjects for next meeting. He was pleased with the method of making jelly just described. Science is here also.

On motion, ordered unanimously, that Prof. Mapes be requested to grow seed from the onion given by Consul Tinelli, and to return some of it to the club for distribution.

Judge LIVINGSTON proposed as the next subject—Pruning.

Prof. MAPES.—Say peach trees too.

Adopted.

Charles Loosey, Vice-Consul of Austria, on the request of the Secretary, presented statistical tables of the agriculture, animals, &c., of Austria.

In these tables the Eimer is about 12 45-100ths gallons; Metzin, 211-1000ths of a quarter. The quarter being eight bushels. The metzin is *about two bushels.*

The Joch is 1 and 422-1000th of an acre, or nearly an acre and a half.

The Klaftir is a *long measure* of a little more than six feet.

The Secretary remarked that these tables are from the best authority, and will cause surprise in those who studied Germany but a few years ago, and compare with this.

President Tallmadge adverted to the great division of land' as stated by Jacquemin, showing close population and great production. He mentioned the capabilities of Russia, where he had seen the vast extent of lands comparatively level, with a village population so condensed, that between villages scarcely an individual is seen. Happily for us, all the people of our Republic can have farms. It is true that the lands of England are in the hands of a comparatively few

Ambrose Stevens. That results from their law of primogeniture.

Subject for next meeting. *Pruning and Culture of the Peach.* The Club then adjourned.

H. MEIGS, *Secretary*.

N. B. The tables of Mr. Loosey are to be published as soon as possible.

AMERICAN INSTITUTE,
Farmers' Club, February 17, 1851.

Hon. James Tallmadge in the chair; H. Meigs, Secretary.

The Secretary said that he had known Charles Henry Hall for the last thirty or forty years, and having been connected with him in public life so closely as to know his views and conduct on several important occasions, he wished to say that the first striking proof of Mr. Hall's public spirit was the introduction of fine merino sheep from Spain, at great risk of the voyage from Spain, with great expense and with great difficulty in the obtaining of the pure blooded animals, as Spain desired to keep her monopoly of these golden fleeces, out of which she had been in the habit of manufacturing some of the richest broadcloths in the world for a long time past.

Mr. Hall also took deep interest in establishing in our country the best breeds of horses and cattle. He acquired more than common knowledge of these subjects, and expended great sums of money on them, and by success recovered large sums by the speed and noble qualities of his horses, and the high qualities of his cattle.

I had the pleasure to act with him in the board of aldermen of this city, in 1831 and 1832. He was deeply engaged in the noble plan of completing, over dales and through hills of rock, the splendid Third Avenue. Great oposition was made to it on two grounds. One was the enormous expense, and the next, that it was a speculation to improve his own lands of Harlem; the answer to which I gave was, that it is much to be desired that the majority of our citizens felt an equally deep interest in thus making all the avenues to our city as perfect as science can make them, in which every citizen has as great an interest as Mr. Hall.

At the same time, Mr. Hall gave the whole weight of his ability to the establishment of our glorious Croton Aqueduct; and his observations on some of the European aqueducts gave force to his arguments for our Croton.

Mr. Hall was acquainted with, and much attached to, the fine arts; his judgment in painting, sculpture, &c., was excellent.

With all this, his prudence had great trouble in restraining his inborn liberality. He rejoiced in being bounteous, and lamented at times the restraints some times imposed on it, in strong terms. He delighted in giving.

May such men continue to be born among us, for such have always been the product of the best eras of our race.

His Third Avenue is a monument to his memory, which, like the Appian Way, will forever be admired.

He was a member of the Institute and of its Farmers' Club. He was an enlightened patriot, devoting largely his time and money to American improvement.

The Secretary read the following translation by himself:

[Revue Horticole, September, 1851, Paris.]

We are much pleased with the further information relative to the immense water Lily, the Victoria Regia, and the gigantic trees of Tasmania.

Flowering of the Nelumbium Speciosum in the Museum at Paris.

Of all the precious vegetables with which horticulture has been enriched of late years, none is more remarkable than the Nelumbium by the celebrity attached to it traditionally, which has attracted in a lively manner the attention of the savans. This magnificent plant, which has now flowered in Paris for the first time, has, however, given its flowers and sometimes ripened its fruit in the open air, at Montpelier.

The Nelumbium Speciosum was originally from India. This was known about the beginning of the seventeenth century; before that time, however, it was considered as peculiar to Lower Egypt, where no person had ever met with it. Anciently it bore the name of *Bean of Egypt, Lily of the Nile, or Lotus*. The ancients ate it, roots and seeds. It is to Charles de l'Ecluse (Clusius) we are indebted for the first indications of this celebrated plant. He sought out all the old texts in reference to the Nympheacea of the Nile. Theophrastus and Herodotus describe it with precision under the name of *Bean of Egypt, or Lily of the Nile.*

N. B. Lindley, in his vegetable kingdom, says, that the seeds are eagerly sought for by the wild people where they grow, in times of scarcity; that the taste resembles that of poppy seeds and are, like millet, eaten either boiled or raw. The Victoria Regia is the most gigantic, and the natives of South America call its seed *water maize.*

[Annales De La Societe Centrale, Paris, July, 1851.]

Translation by H. Meigs, November, 1851, on the Victoria Regia by Mr. Neumann.

We read in the number of May 31st, of the London Illustrated Journal, that an attempt made by Messrs. Meeks & Co., Gardeners of Chelsea, near London, to cultivate this magnificent plant in the open air, has completely succeeded. They constructed a basin twenty-one feet in diameter and three feet deep. They set out in good loam mixed with river sand, a young Victoria plant about the third of March. It then had three leaves measuring (the largest) eighteen inches in diameter. Since that it has grown considerably and seems robust. The number of leaves now (May 31) is seven, which are from three feet and-a-half to four feet in diameter, and as the season increases in heat, they may be expected to attain the greatest diameter. The petioles (foot stalks) of the leaves are from eight to twelve feet long, throwing their leaves to a considerable distance from the base of that plant. The first flower opened partially, on the 16th, and for some hours before its full bloom, it exhaled a very sweet and very powerful perfume. It was in full bloom in the evening of the following day. It was then admirable and displayed all its beauties before a great number of visitors. The colors of this *Nenuphar* are two, white and carmine. The exterior petals are white, and the interior ones carmine—very red and rich. The flower measured from nine to twelve inches in diameter. The duration of the blooming was short, it lasted only during two successive evenings. The flowers succeed each other all the season.

We add, that it has a more noble appearance in the open air than in hot-houses, the leaves becoming *hypocrateriform* (cup shaped,) is very interesting. The basin in which this plant is growing is warmed by means of tubes conveying to the basin warm water. The tubes are in two rows on the bottom, and communicate with the boiler, which warms besides a range of glass-houses. The temperature of the water in the basin is kept up to from 75° to 90° of Fahrenheit. A constant current of clear water is entering the basin. A temporary cover is placed over the basin at night to protect it from high winds. A row of blue, yellow and white nenuphars is placed around the Victoria. In this note we are given to understand that the Victoria may be cultivated in open air, provided you keep the water warm! But now see what my son, Louis Neuman, states to me from Belgium, where he has lately passed some days:

"On entering the garden of M. Donkelaer, the Director, he conducted me to his Victoria, which he kept in a small frame of double slope. An alley in the middle of the frame divided it into two patches. On the right side was a basin about twelve feet long by five wide and three deep: his basin was oblong bowl-shaped. The temperature of the water in it ordinary warmth—not more than 53° Fahrenheit.

"Mr. Donkelaer explained this as follows:—He had treated this plant for a long time, and he says, that when a row of tubes had been placed on the bottom of the basin, in order to warm the water, after having used them three or four times, at moments when the surrounding temperature was too low, he finished by not using them at all, and found the plants growing just as readily as before.

"He remarks, also, that the plants we have are mere dwarfs compared with his, one of the leaves of his measuring four feet and-a-half in diameter, and will be larger. I forgot to say, that the small wheel which he had used to agitate the water, had at first been laid by in a corner of the house. I would advise the covering of the plant at night with a cloth or something else."

Since Clusius, the researches of travelers, historical testimony, the comparative study of the religions of India and ancient Egypt, have confirmed the views of one of the most illustrious botanists as to its re-discovery.

The name *Nelumbo* is the one it bears in the island of Ceylon: Jussieu called it Nelumbium. This plant is regarded as sacred by many of the sects of India, China and Japan, where, in the eyes of the Budhist Priests, *it is an emblem of the world rising out of the waters.* They cultivate it in precious vases to ornament their temples and altars. We find it represented, now a days, in all the paintings which come from India and China. Egypt once had it and bestowed upon it particular attention, but like the famed bird Ibis it disappeared with the old religion, which probably introduced it. It was in vain that Prosper Alpin and the savans, attached to that memorable commission to Egypt, sought for it in the lakes and canals where it grew abundantly in the time of Herodotus. It is seen on the medals of the Ptolemies. Its stalks grouped into bundles decorate the bases of the colossal granite Egyptian figures now at the Louvre. Its leaves served as models for the columns of temples, its young fruits and flowers surround the *head of Antique Antinous*, and they are sculptured on the base of the statue of the Nile, copied from that of Rome which we see in the garden of the Tuilleries and in our national museum. Finally, when Plutarch speaks of a crown of mellilot, and when he ranks that plant among those which grow in the Nile, he evidently means a crown of the flowers of Nympheacea, and not the leguminous plant which at this day bears the name. The Nelumbium of ancient Egypt grew in the lakes and canals where boats sailed. Strabo says the leaves were as large as Thessalian hats. They used them as plates, as goblets, and that the shops were provided with them for sale. The seeds continued to be known by the Romans for a long time and as a sort of food, but at length, little by little, the plant has disappeared from the waters of the Nile, and no trace is left but its figure on medals and hieroglyphs.

The leaves of this plant yielded a sweet milk, white like that of the poppy, and in abundance. The form of the leaf is that of a large vase resting on the water, and is often filled by rain. The inside of this vase has no *stomata*, (mouths,) so that water stands on it like mercury, the drops of water roll up and never enter the leaf. The flower was well described by Herodotus, I cannot compare it to anything better than an enormous tulip, and the comparison is better still as to the buds. At the time of full bloom they measure about one foot eight inches in diameter, or five feet in circumference. The flower is supported on a stem more than three feet in length. The petals are imbricated, that is, resemble scales. The color at the extremities is a very lively rose; there are 12 to 15 of these scales, the numerous stamini disposed in many rows, are like white thread. The flower opens two days in succession, but closes up at night. Its odor resembles that of the rose. The singular structure of the fruit has much occupied the attention of botanists. It consists of an *obconical* receptacle, which is fleshy, of a dark green color; in it are enniched from 15 to 30 pistils. Some have compared it to a hand water sprinkler. On the end of the pistils, are formed small, blackish nuts to which the name of beans was given. Theophrastus has left us a most accurate and perfect description of this plant.

The Eucalyptus Globulus of the Island of Van Diemen. The colonists call this tree Swamp gum, or Blue gum. It is certain that there is but a single species of it. It is of the myrtle family. The stories of travellers about its immense size excited doubts; but at the Crystal Palace we have seen some small segments—one at 134 feet high, is nearly three feet in diameter. Other large trees, such as boab, dragon, chestnut, oak, &c., are generally of moderate height. The Royal Society of Van Diemen state, that six miles from Hobart Town, there is a Eucalyptus Globulus which measures at the level of the ground thirty feet in diameter; at six or seven feet from the ground, twenty eight feet in diameter; and its whole height is nearly three hundred and forty feet. There are many others in that locality as large, or nearly so. The common heights of them are from 190 feet to nearly 300 feet. The cli ate much resembles that of Ireland and the south of England.

Mr. Van Wyck said, the proper cultivation of fruit trees in our country, so as to get the finest quality of fruit, is highly important. This applies with peculiar force to the peach tree, one of the most delicate and delicious of our fruits. Forty or fifty years ago there was no difficulty in having the peach tree grow thriftily, live long, and produce fine fruit in abundance. Various causes are assigned why, within the last thirty or forty years, they will not live more than three or four years, or at most more than six or seven. Some think it is owing to their not being properly nursed, or not nursed enough, or planted with sufficient care, and they go to work and manure well, not only with organic, but many special or artificial and mineral manures, and prune, trim, and cut stems, branches, and limbs very liberally. I think with some others who have experimented much more upon the peach than I have, and with some success, that they are too much nursed, too much pruned and dosed with food, solid and liquid; washed, rubbed and scoured to death, like a pet animal, they are often nursed into disease. Plant the young tree well as you would any other. The peach does not require a rich soil to thrive: it does best on a thin soil, with none or very little trimming and cutting. Let nature have its course with the peach. The stem, foliage and branches should be permitted to grow in all their native luxuriance and wildness. It is believed the tree will live longer by this system than by overdosing it with too much and great a variety of medicine, and produce more and better fruit. It is a refinement in care and nursing which the character of the plant does not require. If any of the branches interlock or cross each other so as to chafe or rub, apply the knife if you cannot turn them in a different direction by the hand. Some years ago I was at the South, and was shown peach trees there said to be nearly or quite one hundred years old, still bearing and looking tolerably thrifty. I inquired what they did to make them live to such an age. They answered, nothing; let them alone. Nature was the doctor, and it was the only one the plant required; and this system they pursued with young ones as well as those that they budded; both those they raised from the pit and by inoculation. Fine peaches, too—plenty of them, and some of the best quality: no premature decay from disease. Sometimes the disease of a hundred years old would produce decline and death, as it does with every thing possessing life, plants as well as animals. The southerners always planted their peach orchards on the poorest land they had—a rich soil they considered as hostile to the health of the plant.

Mr. Elliott had resided in the neighborhood of the celebrated Cramp cow and believes the report of her remarkable case exactly true. She had during the day five changes of food, as of clover, tares, lucerne and hay in summer even. She was kept clean in a small paddock; her bag was well washed with cold water always before milking. She was of the pure Sussex breed.

Professor Mapes.—The regular subject of the day, or rather, one of the subjects being the peach, I will make a few remarks. It is a native of Persia, where it is of slow growth, producing a hard and compact wood, and is used by the Prusian cabinet makers for ladies work-boxes, and other small and bijou-like cabinets. With us the peach tree is of rapid growth, and from bad management, is ill-shapen and carries with it the element of its own destruction: all these faults can be remedied by proper culture. The plan proposed by the large peach growers of New Jersey and Delaware gives them but three crops of good quality and two of inferior, when they are removed and replaced by others. We believe that by proper management, the peach tree may be made to yield its delicious fruit of unimpaired quality for many years. The pits used for planting should be selected from districts where the yellows, as a disease, is unknown. They should be placed in the ground point downward, and not buried below the surface; if this is done late in the summer, the freezings and thawing of fall and winter will burst the shells. Moisture entering the soft or upper end of the shell as provided for by nature, and swelling while congealing so as to rend the shell asunder in the striation of its natural cleavage.

In the spring each kernel will vegetate and, if positioned as directed, will not be constrained to give a curved direction to the young shoot, to enable it to pierce the surface and reach the light, which would be the case if placed in any other position in the ground. These pits should be planted, as directed, in rows two feet apart, one foot distant in the rows. For mode of budding see Downing's Fruit Trees of America. While in the nursery rows do not permit the earth to be piled up about the trunks, and as the young bark, from want of circulation of air, sometimes becomes scurvy near the soil, wet them with a solution of one pound of soda dissolved in one gallon of water, a month or more before the time of transplanting them.

Treatment of the trees when taken from the nursery rows.—Cut off every branch close to the main trunk, leaving the tree in a single shaft like a straight walking-cane; remove no roots unless bruised or broken, then cut off, with a sharp knife, the bruised parts in such direction as to leave the exposed part of the cut facing downward. The object of cutting all the limbs close in to the trunk, is first to prevent evaporation of moisture from limbs before the roots can become established in their new location for its reception; second, to get a more equable balance of limbs greater in number and more evenly divided about the trunk than could occur in the nursery rows, for there the close proximity of other trees in the same row would cause all the branches to grow towards the next row, whereas, when set in place for final growth, with plenty of room and no disturbing causes, branches will put out more evenly and in all directions.

Preparation of holes for planting.—Dig the holes large, and do not, because the tree is small, suppose that the hole must be small; also, in replacing the soil, do not return that which came out of the hole, but fill it up with surface soil, and leave the subsoil removed from the hole on the surface of the surrounding ground, to be improved by the combined action of the sun and air. Be careful to place the tree no deeper in the soil than when it left the nursery row; and to prevent the settling of the earth in the hole, and thus burying the tree more deeply, hold fast the trunk by the hand and settle the surrounding soil by a stream of water. Each of these holes should be three feet deep and three in diameter, which, if filled with surface soil alone, will furnish pabulum for the tree and room for its roots to gain strength before reaching the hard soil and becoming disfigured from want of firmness to enter it. Such a cistern of loose soil will be forever the recipient of the moisture and the gases of the atmosphere. Dressing around the immediate trunk and on the surface of the soil of the *lime and salt mixture* we have so often recommended, will prevent the entrance of the peach worm into the tender bark of the tree. Remove the earth slightly from around the trunk each fall, to prevent the secreting of the worm and the too early swelling of the buds in spring.

New Growth.—The tree, positioned and treated as above directed, having been transplanted in early spring, will put out a large number of branches, very few of which need be removed. The following spring every branch should be shortened in two-thirds of its length, cutting next and close to a wood bud and *never to a fruit bud;* if so trimmed, the wood bud will continue the growth, healing over the end without change of direction;

whereas, when cut next to a fruit bud, the limb will die down to the first wood bud, which will grow in a new direction, leaving a dead stud, and engendering disease in the limb from the entrance of moisture into the dead and absorbent stud.

The following spring shorten again in one-half the growth of the new wood, and so continue each year, always cutting next to a wood bud. By the third year you will have a round headed tree like the horse chestnut, with a great number of short branches capable of sustaining the weight of a heavy crop of fruit; whereas, if left to grow in the usual manner, the tree would bear its first fruit on the end of a very few long, straggling branches, which would be bent down by the weight of the crop, and either be broken off at the trunk or close their capillary tubes on the lower side by bending, so as to prevent the travelling out of the sap the year following for fruit making.

Peach trees will not bear fruit profitably, unless the soil be thoroughly disturbed about them every year.

Such treatment as we have here recommended, we believe, will render the peach *long lived and fruitful*. It is with us an exotic, and cannot be treated like the apple or other native trees. The bark should be kept clean by the soda wash. Cold manures not fermentable in their character, may be occasionally added, and the worm carefully removed from the earth collar, if it should enter from neglect of applying the salt and lime mixture. On our farm we have a few trees so treated, which are double the size and strength of those planted at the same time and treated in the ordinary way.

Solon Robinson.—I cut close from the ground and let the tree branch out from the ground. I do not make a cane of it. I carried the pits for my orchard three hundred miles, to Indiana, and have raised almost all varieties from them. I spaded the ground two feet deep, put in a good quantity of horse manure and the black soil over that. I never saw finer fruit than I had in 1836, and the trees bore last year, but not a very large crop. They are bushes of five parts, and some of them bend to the ground.

Rev. Joseph Carter.—I bought a farm on Cheesequakes creek, Prince's Bay, New Jersey, on which was a handsome peach orchard. The trees along the fence, in good bearing, are said to be about forty years old; some of them, however, showed signs of decay. We worked around them, but lost them. The fence trees are good yet, at sixty-four years of age. These were produced by planting pits on the intended line of fence. I believe in planting pits two inches deep, and at a year's growth cut them down to the ground and bud them and cover the buds with soil lightly. And it is the best way for apple-trees, too.

Mr. Elliot.—I have known peach trees annually pruned in England, sometimes leaving only two buds. It keeps them healthy. They are generally treated Espalier fashion; but they have some standard trees.

Professor Mapes proposed the apple tree as the next subject. Adopted.

A distribution of seeds from California took place. Members were requested to bring some of their best seeds to the next meeting for exchange. One member, who brings but one sort of seed, may take away many, according to the constant plan pursued at the Club.

The Club then adjourned.

H. Meigs, *Secretary.*

American Institute,
Farmers' Club, Tuesday, March 2, 1852.

Rev. Joseph Carter in the chair. Henry Meigs, Secretary.

The Secretary read the following extracts translated by him from the volume presented, (among others,) by Alexandre Vattemare.

[Preceptes D'Agriculture Pratique de J. N. Schwerz.]

Precepts in Practical Agriculture, by J. N. Schwerz, director of the Royal Institute of Wurtemberg, for agricultural instruction and experiment. One volume 8vo. Translated by P. R. De

Schauenburg, deputy from the lower Rhine, pages 330. Paris, 1839. From Alexandre Vattemare.

This small book is almost entirely devoted to manures. It commences that subject by saying:

"All things formed of parts, whether organic or inorganic, are destined to decomposition and transformation. Bodies are decomposed with more or less slowness and difficulty, according to the more or less variety of the parts. Under the first condition are found living beings, animals, and plants; under the second condition, minerals.

Those elements of bodies which are free from the law of decomposition, are, however, subject to that of transformation, on account of their tendency to form combinations between themselves.

There reigns throughout the organized world, movement and incessant working, attraction and repulsion, growth and decay, formation and dissolution. No organized body can exist two instants in succession in an exactly same condition. Life itself depends upon an entire transformation, continued even after death, Indefatigable nature undoes their tissues, decomposes their elements and restores them to their primitive forms, in order to create, with the same materials, new combinations. Nothing that ever has been is lost in its marvellous laboratory. That which is, has been, and ever shall be. Like the Phœnix from its ashes, the debris of beings again become beings. There is nothing altogether new. The power of things are changing, but their elements are imperishable.

When we remove a forest of great trees from the ground, we wonder whence the matter they contain came, considering the small quantity of humus which they grew in, but we find infallibly that the forest has enriched the soil where it grew instead of diminishing it.

VEGETABLE GREEN MANURES.—Lupin merits the first rank among these. A field of it, at a distance resembles very thickly planted hemp. The fertilizing properties of the Lupin were known in the highest antiquity, and it was employed as a green manure. It came originally from the warm parts of Europe. It succeeds also in Germany, particularly in the wine districts. It doubtless succeeds in less temperate countries, but it does not ripen its seed so easily. The Lupin (says Burger,) is not only contented with a bad sandy soil, but developes itself with a rapidity and surprising extension; this gives it great value as a green manure. In hot countries they destroy the germinating power of the seeds by heat, and then place them about the roots of Orange and of Olive trees to restore health and strength.

THE PEACH AND APRICOTS 1800 YEARS AGO.—The Secretary stated that in Pompeii and Herculaneun there have been found *plenty of the pits of peaches and apricots.*

FREEZING OF VEGETABLES AND ANIMALS.—R. L. Pell said that, Hunter says animals must be deprived of life before they can be frozen; and that plants in a state of actual vegetation, must be deprived of their principle of growth before they can be frozen. He says that every tree and shrub is dead that is frozen, and if the frozen part is thawed it will be found so. We think Mr. Hunter is mistaken, as animals have been found whose bodies were completely and absolutely frozen, yet, on being brought into a warm room and thawed slowly, have returned to life. Reptiles and fish have been frozen without losing their vital principle. Perch and mullet were recently taken from Lake Champlain and frozen till they were solid, when they were placed in cold water and soon became active. Numerous species of fish were discovered frozen in the Polar regions by Bell, Pallas and others, which were restored to life on being thawed by them in cold water. Hearne mentions in his travels from Hudson's Bay to the Northern Ocean, that he found frogs so thoroughly frozen that their legs were as brittle as pipe stems, yet they resumed their natural movements when exposed to genial heat; but if permitted to freeze again, after having been thawed, they never recovered. He found spiders and grubs in a similar frozen condition, with the same powers of revivification on exposure to a warm atmosphere.

The larvæ of insects are found to be equally tenacious of the vital principle. Lister, Bonnet, and others, are said to have found caterpillars so frozen that when dropped into a glass they chinked like stones; but that they, nevertheless, revived on being brought into warm quarters.

Spallanzani discovered that exposure to a temperature of 38°, or even 36°, did not destroy the fertility of the ova of silk worms.

Sir John Ross, on his voyage, placed thirty larvæ of the Laria Rossia in a box, and exposed them three months to the winter temperature. On bringing them into his cabin, every one of them returned to life and crawled about. They were again exposed, and instantly became re-frozen. After a week they were brought into the cabin and twenty-three returned to life. These were again exposed and re-frozen, and, after remaining solid for another week, eleven of them recovered when brought into the cabin. They were a fourth time frozen and brought into the cabin, when two only came to life.

Learned men say, that these facts indicate that the power of revification after the complete congelation of the fluids, is confined to animals in which the function of calorification is imperfectly performed, and in which all the vital processes are obscurely manifested.

It is certain that the functions of vitality are much more obscurely performed in plants, therefore they should be endowed with a like power of resisting the effects of freezing. Still, scientific men say that complete solidification of the fluids of a plant necessarily result in its destruction.

Professor Henslow seems to think that the chief protection against the sap freezing in the trunks of trees, is the circumstance of its being contained in extremely minute vesicles and capillary vessels. Water will resist a temperature of 16¼ Fahrenheit under similar circumstances, and all viscid fluids are still more difficult to freeze than water.

By taking certain precautions, water may be cooled fifteen or even twenty degrees of Fahrenheit, scale below the proper freezing point without the supervention of solidification. He says it must be cooled without the slightest agitation, and no angular body must come in contact with it. If tremor is communicated, congelation commences and the temperature starts up to thirty-two degrees.

Eminent physiologists say, that the sap of trees and shrubs, which are uninjured by extreme cold, are never frozen. I have known cabbages to freeze to the very centre without sustaining injury; so do other plants too numerous to mention.

On the Apple.—R. L. Pell said, that the most useful of all our fruits is the apple, because it comes within the reach of the humbler classes of mankind, is hardy, consequently can be grown universally without the aid of artificial heat. It is employed in the dessert, the culinary department, and for the manufacture of cider, and has a decided advantage over all the known fruits, that is, it remains a *long time in season*, and can be kept through out the winter without difficulty. The Romans set an extraordinary value upon fine bearing apple trees. It came originally from Asia, and was introduced into Europe by grafting upon the crab apple, which was indigenous to that country, where there are now trees one thousand years old. In 1831 the Horticultural Society of London enumerated fifteen hundred sorts in cultivation, ripening from the first of July to the last of November. In 1629 there were but fifty-eight varieties known in Europe.

Apple trees cannot be made to grow and bear fruit in tropical countries, neither is it known in Lapland; it extends to the latitude of sixty. Like the oak, it is the growth of temperate and cold climates alone. Many imagine that the splendid apples known to our ancestors are now debilitated and partially worn out; among others they instance the Golden Pippin, and even go so far as to say that, when the mother tree of the apple dies, all derived from it die also. I consider this idea entirely erroneous, and know it to be so from the fact that the original Newtown Pippin tree died some years since on Long Island, and the mother

Spitzenburgh tree, which originated in Esopus, Ulster county, this State, died some years ago. The progeny of these trees are as healthy and flourishing as they ever were, and with care will so continue for two centuries to come at least. If any gentleman in this Club will take the trouble to visit some of the orchards in New-Jersey, Long Island, or our own Empire State, he will not be surprised that they sometimes die; they are never trimmed, never scraped, never plowed among, never manured, and never looked at except with disgust, when, in fact, they require almost as much care and attention as a man's children. What farmer would treat his corn in this manner? For that crop he enriches the land, plows and harrows it thoroughly, plants his corn, ashes and plasters it, hoes and suckers it, plows and hoes it again and again. Does he give the quarter of this care and attention to his apple orchard? I answer, without fear of contradiction, no! He plants the trees in holes half the size they should be and leaves them to nature, then wonders why his apples are few in number and inferior in quality. Apples should be divided into three divisions:

First, Those which are sweet and fit for eating, called table apples.

Second, Those which are acid and proper for tarts, termed kitchen or baking apples.

Third, Cider apples.

All apples contain, in their composition, malic acid, sugar, mucilage, woody fibre, carbonic acid, silica, phosphate of iron, phosphoric acid, sulphuric acid, chlorine, soda, potash, magnesia, lime, and from sixty to eighty per cent of water. One thousand pounds of fresh apple pomace contains over eight hundred pounds of water. How can a neglected apple orchard be expected to produce abundant crops of fine fruit when all the aforementioned substances are required, but never supplied by the horticulturist? By maturation the juice of the apple is converted into sugar by a chemical process called saccharine fermentation, which rapidly passes into the putrefactive stage, when the sugar is changed to a bitter principle and the mucilage moulds; the fruit then becomes offensive. If an apple is cut across and placed in a moist situation for several days, the surface will become covered with fungi, having an arborescent form resembling the mosses, consisting of upright stalks surmounted by bulbs; when the fungi arrives at maturity the bulbs burst and scatters its contents, consisting of small black seeds, far and wide through the atmosphere ready to fall on apples, bread, or any other substance in a condition to receive it.

In preparing land for an orchard, I would plow previous to winter to the depth of sixteen inches, followed with a subsoil plow to the depth of sixteen inches more, and deeper if I could. The land should remain in this rough state all winter to pulverize the soil by the action of the frost; in the spring draw upon it a prepared composition composed of muck, stable manure, salt, charcoal dust, bone earth, ashes, soot, &c., at the rate of forty loads, of thirty bushels to the load, to the acre; spread the same and plow it under, plant potatoes manured in the drill, market them and sow turnips; when they are taken off dig your holes twenty feet apart, six feet in diameter, (square form,) place composition in the bottom, cover it with surface soil, plant your tree, spreading all the roots fan shape by hand, and fill all the interstices with pulverized earth, after which pursue the mode recommended for peach tree planting; till the ground annually with potatoes, corn or cabbages; manure every other year; keep the trees well trimmed and staked, wash the trunks annually with soft soap; when the branches of the trees meet, cut out, or plant out, every other tree, which will leave your orchard forty feet apart, the proper distance for an apple orchard of large trees. All limbs crossing each other should, from time to time, be taken out with a long handled chisel and mallet that the centre of the tree may be thrown open to the sun and air. Suckers must be cut off, or thumb pruned in July when they are particularly tender, and if the tree becomes bark bound, which will rarely happen with this treatment, split the bark with a sharp knife through to the inner wood, from the surface of the ground as high as a man can reach with an out-stretched arm. Cattle, horses or sheep must never be allowed access to the orchard; hogs will do no harm. Wheat, rye, barley or oats must not be sown; buckwheat may be, and so may all sorts of root crops, with advantage; plowing among apple trees with oxen will serve them. Attention is necessary to keep the land always free from weeds. When the trees require trimming perform the operation early in June if possible, because the sap is in motion upwards to develop the leaves and fruit-buds at that season, and the consequence is, a covering immediately extends itself over the wounded portion, preventing decay of the wood, which scarcely has an opportunity afforded it of becoming dry. When the bud is first excited to grow in the spring, the fluids contained in it are increased in density by evaporation; endosmose at once takes place between it and the lower tissue, which parts with the thin portion of its contents and immediately acts by endosmose on the tissue adjoining, and in this way the entire fluid matter in the tree is put in motion from the extreme end of the branches to the minute points of the rootlets and spongioles. When they are affected the fluid substances in the soil are attracted through their pores, thus forming motion throughout their system. Therefore, it will be perceived that the leaves and buds of trees in the spring is not the effect of the ascent of the sap, but the cause of it. An apple tree eighteen years old probably perspires several hundred pounds of moisture each day, which must be restored from the earth by means of the roots. To prove this take, for example, the leaf of a grape vine in a hot day and place a glass next to its under surface; within an hour water will run down the glass in streams. A cabbage perspires over one pound of water in a day. *This* fully explains the phenomenon why transplanting trees in summer causes their death; the spongioles become dry and utterly incapable of absorbing moisture from the earth as rapidly as it is given off by the foliage, therefore the tree is in a short time emptied of its fluid and death is the natural consequence.

I will mention two recipes, that may be useful to the Club, before we leave this subject of the apple tree.

The first is an invaluable composition that we have compounded for curing wounds in fruit, or forest trees, caused by the plow, harrow, mice, or trimming. To thirty pounds of hickory wood ashes add ten pounds of sand, ten pounds of charcoal dust, two pounds of alum, one pound of sulphur, thirty pounds of slacked lime; sift these compounds and mix them perfectly with thirty pounds of fresh cow excrement; convert them to the consistence of thick paint by adding strong soap suds to the mass, and put it on with a stiff brush.

The second recipe is Columella's mode of preserving apples. He directs that they be picked before quite ripe and examined carefully to see that they are sound, and without blemish or worms; they are then placed in earthen jars, which are to be filled with raisin wine, or with must, that is, the expressed juice of the grape before its conversion into wine by fermentation, boiled into a third of the first quantity, so that all the apples may be covered by the liquor, then put the cover on and plaster it.

Peach Tree.—Among the most delicious of all fruits may be named the peach, (*Amygdalus Persica.*) The Nectarine is a variety of peach produced by cultivation. I have seen peach trees bearing smooth skinned Nectarines on a portion of their branches and rough downy skinned peaches on others, and in one instance a peach covered with down on one side and a smooth skin on the other. No difference can be discovered between the two trees when growing near each other, even the blossoms are alike. According to the Romans the peach tree originated in Persia, where it is said to grow wild; they consequently called it Persica, by which latter name it is usually known by modern botanists to distinguish it from the Amygdalus. They require a long warm season to bring their fruit to perfection, so much so that in England glass houses, or walls enjoying a southern exposure, are requisite to perfect them. There are but few fruits superior to a peach, if the skin is thin, flesh firm and thick, pulp yellowish and the juice flavored. If a peach is covered with a thick down it is invariably of inferior quality; if the flesh separates immediately from the stone on being broken, the peach is called freestone, or melting; if, on the contrary, it adheres strictly, it is called clingstone. There is a village in France known as Mon-

Digitized

treuil, where peaches of a very superior quality are grown in large quantities, and have been for ages. Nearly all the inhabitants are engaged in this business; from it they derive their maintenance. There are no peaches raised in any other part of France equal to those of Montreuil; but in Italy they are far superior. From the young leaves of the peach tree a delicious Noyeau is made by keeping them in sweetened brandy; from the Nectarine a drink called nectar, and used by the gods, was made in former times, and from the kernels prussic acid is developed by combining them with water.

The function of the woody tissue of the peach tree, physiologically speaking, is to support the numerous organs for respiration, digestion, &c., containing the sustenance necessary to form portions of the tree before communicating directly with the soil; this tissue is made up of long, thin, membranous, hollow globules invisible to the naked eye and bundles of tubes more fine than the hair of women—the most solid portions contain the largest number of these; then there are concentric rings, which form numerous hollow cylinders, one within the other, making a yearly addition of a circular layer of new wood indicating the age of the tree. If the tree is so located that one side obtains more light and heat than the other, the favored side will show an increased thickness of layers and more vigorous growth, the leaves will be richer and the branches more luxuriant. When the tree is equally favored on all sides the limbs will be equal and the layers will be the same thickness all round.

The best location for a peach orchard is on a side hill with a south or south-east exposure, sheltered from the north and west winds. The climate of such a situation is always warmer than any other and the sub soil is more apt to be dry. The best soil is a rich calcareous loam, which should be always kept under the plow, cultivated with some crop requiring constant hoeing, and this ground cannot possibly be too rich. The yellows, in my opinion, is caused mainly by starvation. The tree bears a luxuriant crop, to perfect which it requires constant enriching together with excessive pruning. After the fruit is taken off the dirt immediately surrounding the trunk must be removed and the peach worm sought after and destroyed; three or four wheelbarrows of rich compost may then be placed contiguous to each tree and covered with earth to prevent the escape of ammonia and other gases. In the month of February cut off many of the branches that have borne fruit, as they never yield a second crop, and thus throw the tree as much as possible into new wood for the succeeding year.

When trees are selected from a nursery for orchard planting, such as have a single strong clean stem that has been once headed in should be chosen, as small stemmed trees produce weak shoots. Shoots must not be allowed to grow long the first year; they can be pinched off with the fore finger and thumb early in the season—if left later it will cause wounds upon the tree to tear or cut them. The second year you may top and prune the tree in proportion to the strength of the stem, leaving the shoots from nine to twelve inches long; the third year they may be allowed to bear a few, and if the growth is vigorous, you may take off some of the strong shoots, which will induce side shoots to grow and make fine bearing wood for the ensuing year. If these are permitted to grow their full length they will be spongy and incapable of producing fruit bearing wood.

When weak trees are pruned they should never be cut at single flower buds, if they are, the whole shoot will die. In peach trees coming to the bearing state, you will invariably see two flower buds close together, and in the centre between them, a wood bud; this produces the shoot that yields fruit the following year. Summer pruning should be constantly attended to as all the side shoots, near the top of the tree, must be taken off while tender; if permitted to grow, they weaken the fruit bearing branches for the next year.

Borders for wall fruit should be made three feet deep and from four to six feet wide, of good, lively, light, fresh loam, raised from nine to twelve inches above the contiguous ground to allow for settling; when the tree is placed in the hole prepared for it, fill all the interstices under and around the roots with the richest and best mould—a short, sharp stick may be used to advantage for this purpose; fill the hole to the top without treading, then pour on as much water as this light soil will absorb; place a strong stake near the tree and tie it firmly thereto; let the tree remain in this condition until the next day, when fresh mould may be thrown on and the whole consolidated as much as possible by treading; rotten leaves, or barn-yard manure, may now be placed on the surface around the tree, which will shade the ground from the sun's rays and prevent the rapid escape of moisture.

A gentleman in Kentucky says the yellows is caused by a grub worm one inch long when full grown, largest at the head and tapering down. It is propagated by a long, slender, dark colored fly about the size of a yellow jacket. The eggs are laid at the foot of the tree in July and August, and when hatched, the maggot descends and enters between the wood and bark of the roots, on which it feeds until the leaves turn yellow and the trees ultimately die of yellows. His remedy, which he has pursued eight years successfully, is to place stable manure, closely packed three or four inches high, about the trunk of the tree in May or June.

This worm of which the gentleman of Kentucky speaks, is the common peach worm. It never enters the hard wood of the tree as the apple borer does, but confines its depredations entirely to the pulp between the wood and hard bark; he may be easily discovered from the fact that gum always oozes out near the surface of the earth in his immediate vicinity. The fly invariably selects young trees with soft bark in preference to other ones. In my opinion it is the enrichment of the earth contiguous to the roots of the peach tree that prevents the yellows to a far greater extent than the attack of the fly. If the proper ingredients requisite for its growth, and the formation of its fruit, are annually supplied without stint, the yellows will rarely make its appearance.

Professor Mapes presented for distribution some of his Stowell ever-green corn, much valued; he had sold it for a dollar a quart, equal to thirty-two dollars a bushel, *for seed*. He also presented a jar of jelly made by him from his Catawba Grapes. The members of the Club (some thirty-five in number) tasted it and gave their opinions. Some said very good, excellent and delicious.

The Professor said, the attendance of practical fruit growers is larger than usual and much information has been elicited. Mr. R. L. Pell made remarks on the culture of the apple and gave a succinct history of his experiments and their results.

Our readers are aware that Mr. Pell is the owner of the largest apple orchard in the world, and no grower of this fruit has been more successful. He was the first to discover that apple trees might be made to bear every year by supplying the necessary pabulum for producing fruit.

Mr. Pell and some other members stated that those trees to which they had given liberal supplies of manures of the proper kind, were not deteriorated in quality by bearing every year instead of every other year, but that, in every respect, they were improved; the tree as well as the fruit was advanced in quality, and the gain by rendering them more fruitful was very great. The bark of the trees should be kept clean by scraping off the old and dead bark, washing the trees with a solution of one pound of bleachers No. 1 soda in a gallon of water, &c. The trimming, when necessary, should be performed in June, and the suckers should be removed in midsummer while green and tender by rubbing them off instead of waiting until they are large enough to require the knife. Orchards should be as thoroughly cultivated as other crops, and should not be used for the raising of such crops as require similar constituents to those composing the apple tree or fruit. Mr. P. stated that, in his early experiments, they were conducted without an analysis of the soil or fruit, but he was well aware that, whatever the necessary constituents might be, they would require amendment for increasing the crops, and he therefore made a compost as general in its character as possible, and containing the greatest variety he could get together of such ingredients as he could presuppose to be proper; that he removed the surface soil from the roots, applied the compost near the roots so as to be within distance to be reached by the spongioles and covered again with the soil. From the large quantity of lime which the bark and leaves of the apple tree were known, even at that early day, to contain, he had limed liberally, which doubtless operated in promoting the decomposition of the organic portions of the compost and in rendering all portions soluble in water for the use of the tree; that the portions of his orchard thus treated had produced good crops of fruit every year instead of every other year as was the case with unfed trees.

The great age of the apple tree was spoken of; some were known in England two thousand years old. A member present stated that he had cut down a tree on his farm the year after its having given a full crop of fruit and found the trunk to have two hundred and fifty annual rings.

It was stated that one thousand pounds of apples contained one hundred and seventy pounds of organic matter, which must necessarily be used from soils containing apple trees and therefore required renewal; nor must this organic matter be of a fermentable or heating kind: muck, river mud, woods-earth, chip manure or other cold composts--fully decomposed tan and, indeed, any of the results of vegetable decay which had lost its power of reheating by additions of moisture.

The inorganic requirements also require renewal; thus, one hundred pounds of the ashes of apples would yield four pounds of lime, twenty-four pounds of soda, two pounds of chlorine, and probably a still larger amount of these ingredients for forming the leaves, bark and wood. Among other constituents the phosphates are required, sulphuric acid is also necessary to ensure fruitfulness; potash must be added and therefore the latter materials should be added to the muck, mud or wood-earth, so that, in addition to furnishing the inorganic amendments, they might assist in the decomposition of the organic matter and render the whole fit for use in the orchard. Phosphoric acid, sulphuric acid and lime will result from the solution of bones in sulphuric acid; chlorine, lime and soda from the decomposition of common salt by lime, while the potash may be added in the form of wood ashes—either or all these render organic matter slowly soluble in water and ready for the use of the trees. Frequent plowing of orchards was recommended, and the raising of root crops by liberal manuring was also recommended as a ready, cheap and self-paying method of giving health to orchards. The loam, leaves, &c., from woods were generally admitted to be useful for orchards, being the results of decompositions of organisms not dissimilar to fruit trees.

Fruits of many kinds preserved by Mr. Curtis, of Massachusetts, were exhibited; among them were several kinds of choice pears of superior quality with all the fine flavor and beauty of appearance of fruit freshly ripened. The process of Mr. Curtis is as yet a secret, but it is hoped he may be induced to make it public. Jelly from the Catawba grape was also exhibited having all the flavor of the fresh grape, the mode of preparing which will be made known in our May number.

A quantity of Stowell's evergreen corn was distributed among the members, and the subject of apples agreed to be continued for the next meeting. On motion, the culture of pears was added, and the Club adjourned to the third Tuesday of the month, when the public is invited to attend.

Mr. Van Wyck.—The apple tree may be said to be a native of our country. The crab apple tree grows wild in many of our forests. The crab apple, differing in size, flavor, and appearance, —for there are many varieties of them—will grow well only in a northern climate. Hence, our numerous kinds grow best, produce more abundantly, and of a finer quality, from 38 to 45 and perhaps 50 degrees north, although most of those growing in our country, no doubt, came from Europe, and consist of many different kinds, and some of the best qualities. We could have had them here in time, in equal numbers and variety, by cultivation, as we have now by exportation. We have their origin here, the crab apple, from whence they all sprung in Europe, and these, probably, finer and of more various kinds, than ever they were there. Besides, it is admitted by most European writers on fruits, that the apple in America prospers better in every way than in any other country. This embraces longevity, cheapness of raising them, abundance, variety and flavor. I agree with

Mr. Pell on most of the important points contained in his essay on the apple, and the best manner of cultivating it for profit. He certainly has had great experience and success. This shows that his system of treating them, is in the main, correct. They are a hardy tree, will grow to a considerable size, stand almost any degree of cold. They require a rich soil, and manure of various kinds, to produce abundantly. I think that probably he may make those trees, or some of them, which produce fruit in any quantity only every other year, yield it every year, by treatment with certain kinds of manures, mineral and organic, of which bearing trees exhaust it. It is well known that this is the habit of most fruit trees, to produce in quantities, only every other year. Nut trees, hickory, chestnut, &c., will produce only every other year. These grow, too, in forests, wild, in a state of nature, where the earth is rich, and every kind of manure derived from leaves, old wood, grass, &c. This shows that it is natural to the fruit plant to do this, especially when the habit so universally prevails among them all. It seems to be required by nature for rest; after the effort of giving one great crop, it requires repose for a year. There is among most orchards, and indeed, all kinds of fruit, whether it grows in the forest or field, a few trees that bear every year. I have observed myself, and have been told by others who have observed the same thing, that those trees which bear a full crop every year are subject to an earlier decline. They decay and finally die before those that bore only every other year. This is natural; the year of repose and rest, by some freak or sport of nature, they have been deprived of, and they sink sooner under the effort. Reasoning from analogy, it is a question with me whether the fruit trees that are forced from their natural course of producing every other year, by an unusual quantity of special, artificial, or mineral and organic manures applied to them, would not be exhausted, decline, and die considerably sooner from the same cause. It has been said in answer to this, that making the orchard produce every year, would give so much more fruit as to pay for the loss of the trees earlier in life. This is rather speculative. Many things are to be considered in estimating this damage, accompanied with contingencies. The cost of the extra manure, the labor of procuring and applying it, the cost of planting a young orchard to supply the place of the old one, the time it would be before this began to produce so as to be profitable, how many years would be lost, by this extra effort of the old one to produce every year, as it would be pretty difficult to tell the year or time they would die—whether in ten, fifteen, or twenty years. These philosophical or scientific experiments in agriculture, that require so much time, cannot be easily made with any accuracy. In ten or fifteen years a new system may be discovered and considered a great improvement on the present one in raising fruit and other agricultural products. Those of the present day may be cast aside as visionary and of little worth, compared with what science and progress may discover hereafter. Even those who by their superior acuteness and diligence brought them into notice and use, would almost blush at their own short-sightedness, in not seeing as far into principle and improvements as those who came a few years after them. The regular subject of the day being the apple, strictly, the debates should have been confined to this. It has been joined, though, with the peach, somewhat different in character and principle, and facts stated, in regard to the last fruit, which do not meet my views. I must therefore notice some of these facts. It has been said the peach tree requires a very rich soil and liberal pruning, more or less every year. The peach is a native of a hot, dry climate, the sandy plains of Persia and the Persian Gulf, deserts of Arabia, some parts of Egypt. It is said they will not grow on the banks of the Nile—it is too rich for them—made so by the annual inundations of this river. When brought north in Europe or America they thrive best, and live much longer on a light sandy soil, and very little manure. The thrift of the peach in our southern states, and the great age to which they generally live there, proves this. One object in not pruning much, is to let them have the benefit of all their leaves and branches to protect the fruit and tree generally from our hot sun, which injures both. In England, and countries far north, they prune more; they want the sun on their fruit; it matures better. A rich soil makes the tree grow up rank and rapid, full of juices, its sap vessels distended and surcharged with sap. These often burst, and the regular flow of the sap up and down, in the natural channels is intercepted, its whole organization thereby deranged, and decay and death soon follows. The sap ascends from the roots to the leaves, and is there elaborated and descends through similar channels, and in its descent after elaboration, a portion of it is assimilated with the tree, and increases its wood and growth, and preserves its life. The eleven or seventeen ingredients which it is said all, or most plants require to make them live and grow, would not help the peach tree thus afflicted; they would not any of them touch the seat of the disease. Perhaps these or some of them might have assisted in producing the cause, that is, too sudden and rapid a growth of the tree, occasioning a superabundance of juices, and thereby surcharging its sap vessels and making them explode. It is not unlikely that every disease to which the tree is subject, arises from some such cause, some maltreatment in its culture, it may produce the yellows. We do know that the tree in the middle and eastern states is and has been forty or fifty years, short-lived, where it did not use to be so. If any one could discover a remedy for this grievance he would be conferring a great benefit on his fellow citizens, in increasing largely their health and happiness, profit and comfort.

Mr. Manice, of Long Island.—I know that the early harvest apple which is accustomed to bear a crop only every second year, is now made to bear fine crops every year. In some fruits this constant production of fruit is found, and not at all with any injury to the trees. An orange tree will give three crops a year.

A member asks: How is it in forest trees?

Another replied: Hickory gives nuts only every second year.

Professsor Mapes.—When they are mulched they bear every year. Their own leaves covering the ground all about them, does this. Single trees, where the leaves are blown away from them, bear biennially.

The Chairman gave an invitation to all the members to bring at next meeting some of their best seeds, grafts and cuttings for exchange. Each may bring but one, but he may carry many away. And besides, when brought by honorable citizens they are far more reliable for quality.

The Chairman said that potatoes left in the ground during the winter, produce next season more tops than tubers. That when the natural ones were transplanted by a farmer of his acquaintance, he had good crops from it, and *no rot!* He took the growth from the eyes of the potatoes.

R. L. Pell.—That is my method, successfully practiced for ten years past. I take a piece of the potatoe, at the bottom of the shoot, and set it out. The effect of this method is, to give potatoes about five weeks earlier than by the common way of planting.

Professor Mapes remarked, that in Beatson's pamphlet, published 20 years ago, this method was fully settled, and a conclusion as to its results well founded, viz: that it will not give large crops; that it is, however, well enough for small families desiring very early potatoes.

Subject for next meeting—*The Apple continued, and the Pear added.*

The Club then participated in the Catawba Jelly and the division of seeds.

A drawing of the circumference of a potatoe exhibited at the Western World Institute Fair, was exhibited to the Club, being two feet four inches in circumference, and its weight seven pounds and a quarter. This drawing is sent by Andrew Williams and B. F. Stevens, Esq., of California.

The pears preserved by W. Curtis, of Boston, were presented by R. L. Pell, and tasted by the Club. The opinion that they had retained their ripe delicious flavor was unanimous. The external appearance of some of these pears was that of being just picked full and fresh from the tree.

The Club then adjourned.

H. Meigs, *Secretary.*

American Institute,
Farmer's Club, March 23d, 1852.

Hon. Robert Swift Livingston, in the chair; Henry Meigs, Secretary.

Subject—*The Cherry Tree.*

Professor Mapes remarked, that the cherry tree was generally of rapid growth. The black and heart shaped cherries are always vigorous, have fine large spreading heads, forty or fifty feet high. Acid and red cherry trees are of low stature, more bushy, and of tardy growth.

The cherry came originally from Asia. Lucullus brought this fruit from *Cerasus* into Italy in the year 69, before Christ, according to Pliny; 100 years after this the Romans had eighty varieties. It was introduced into this country from England and Holland.

Uses.—A good dessert fruit; early; the acid kinds good for cooking; the Kentish and the early Richmond may be stoned and dried. Our Virginia wild cherry is used to give flavor to brandy. These cherries are worth four dollars a bushel in the New-York market. *Kirschwasser*, *Ratafia*, cordial of Grenoble, and *Maraschino*, the favorite liqueur of Italy, are all made from the Black mazzard, or jean.

Cherry gum resembles, and is used for similar uses with the gum arabic. The wood is hard and durable. The Virginia, or wild wood, resembles mahogany, and takes a polish. Large black cherry is the fruit shade tree; has a large sized blossom of fine form, and its shade fits it for a *road-side tree.* Avenues of cherry trees on the continent of Europe; they are tabooed trees; property of the people.

Soil and situation.—This tree delights in a free soil, and is there long lived, even if the soil be light and thin. It bears more luxuriantly in deep loam. In over rich alluvial soils, like those of the west, it runs too much to wood and bears shy; the trunk overgrowing and splitting. It is short lived in damp places. When planted in warm vallies and soils it should have the northern exposure to prevent too early blossoming.

Propagation.—Bud on the Black mazzard. Prepare the seeds of the Black mazzard for raising stocks; place the cherries in a pile to decay; wash off the pulp; plant the seeds in a nursery in drills; cover them one inch deep; they will vegetate in the following spring, and be fit to plant out in nursery rows, twelve inches apart, in autumn or in the next spring. In the following August bud them, separate the small from the large stocks, put them in separate rows. Our cherries are generally with us as standards. In good soils the buds will make stocks six or eight feet high in one season. For dwarf trees, the Morello seedlings are used for stocks; for very dwarfed trees, the perfumed cherry (cerasus mahaleb) is used. Dwarfs must be headed back in the nursery in the second year, to secure lateral shoots. As to cultivation, the cherry trees require but little. Manure old trees slightly; prune out too thick heads or dead and crossing branches, but only when it is really necessary; prune always in midsummer, for that is the only season when the gum is not exuded. It is not a very long lived tree; averages 30 or 40 years. The training of it is not much in use here. The Heart and the Bigarreau are the only kinds trained, and those horizontally. The proper distance between the trees should be 20 feet for strong trees, and 18 for the slow growing kinds. Trained cherry trees are cut off twice in each season, in May and July. When bark bound wash them with Rennies' mixture—1 lb. soda to a gallon of water. The mixture ascends the capillary vessels, and is much aided by the motion given to trees and plants by wind. A rattan with one end placed in water and then bent to and fro raises the water to its top.

[Portsmouth Journal, March 8, 1852.]

A recent discovery has given to commerce and household consumption, a cheap and effectual agent for deodorising and disinfecting localities, where the disagreeable exhalations of ammonia and sulphuretted hydrogen prevails, such as sick chambers, yards, manufactories, privies, &c. The article is a kind of peat found at Cape Elizabeth, four miles from Portland, Maine, which contains various saline matters, having the properties of pecipitating sulphuretted hydrogen and ammoniacal gases, and rendering them perfectly inodorous. Besides these valuable qualities of the peat it is also one of the best fertilizers extant, containing as it does large quantities of phosphate of magnesia and lime, sulphate of soda and potash, carbonate of lime, chloride of sodium, and soluble silicates of the alkalies, all of which are the necessary every day food of all the esculent and farinaceous plants that make up the vegetable food of man. This remarkable peat is rendered still more powerful than in its native state, by a difficult process of charring, now rendered perfectly easy by certain new improvements now in use by the Great Pond Mining and Agricultural Company, incorporated in Maine, who have established works for the manufacture of this agent and the introduction of it into general use. The Legislature of Maine, on incorporating this company, held its object in such high esteem as to exempt it from taxation for a period of five years. The company has now a steam mill which is capable of grinding 500 boxes a day, which sells for two dollars a box. The supply is extensive and can be made equal to consumption, which as soon as it is known will be immense. This is the only mine of peat in the country known to possess these peculiar properties.

Mr. Van Wyck —The primary division of cherries into *Bigarreaus* *Morellos* and *Heart*, having been fully described with some of the varieties under each head, and commented upon, I shall confine the few observations I shall make on the subject, mostly to some notice of the *common red sour cherry.* This is pretty well known in all parts of our country, and I think it is one of the most useful and esteemed of this class of our early fruits. It begins to turn red, when a little more than half grown, about the latter part of June, and continues growing and changing color to a deeper red until ripe. There is no better cherry for cooking. It will answer for this, a few days after it begins to change its color, until it gets perfectly ripe, which is towards the middle of July; after it gets *dead ripe* as it is usually called, it becomes a dark red, the sharpness of its acid is greatly blunted and softened by its perfect ripeness, then it is an excellent table cherry to eat as a dessert, the same as the sweeter varieties, it is one of the finest for pies, puddings, &c., and will answer for these when about two-thirds ripe, with plenty of sugar at this stage; when ripe the best kinds are of good size, the trees good bearers generally, and when full of fruit have a beautiful appearance, contrasted with the green leaves; they are very easily raised, require a good soil, the shoots spring up every where were the tree grows, it will grow thriftily from the roots, suckers or seeds, and I have known them to bear two years from transplanting the shoots and three from the seed, and increase in the quantity of fruit, as the tree increases in size, and thus unfailing, almost every year, more or less. They are not preyed upon so much by insects as the sweeter kinds, still they suffer at times some, I have seen nurseries spring up where the trees grow, and become shortly troublesome from their rapid growth and numbers, and the farmers were obliged to dig them up or cut them down and make fire wood of them, not wishing to increase their number by transplantation. Latterly, they are as much sought after I think in our markets as many of the sweeter kind, and more than some; our gardeners and farmers ought to raise more of them, as it is thought from the ease and certainty of their growth and qualities as bearers, they would pay as well as any. The little *honey cherry*, resembles them in quantity and certainty of bearing; of a fine flavor, a little tart, but not as much so as the *sour cherry*, so called. The former it is said, will not suffer from the long spell of hot moist foggy weather we sometimes have about cherry time, and causes most of the sweet delicate kind to rot on the tree.

Colonization et Agriculture de L'Algérie. By L. Moll, Paris, 1845: Extracts translated by H. Meigs, 1852.

The camel does not afford as many advantages to our colonists as to the Arabs; it is even probable that, in proportion as roads shall be opened, they will lose their importance in the eyes of the latter, at least in the northern part of Tell, for the camel, being adapted to the pack-saddle only, and also more to plains than mountains, must necessarily give place to vehicles and draught animals wherever there are roads. The chief advantages of the uses of camel or dromedary will be rapid travel, the milk of the female, the flesh of the young ones and the hair of the old ones.

In February and March camels couple and bear until the ensuing spring. In the rutting season the males are ungovernable and dangerous even to their masters. The mother shows great tenderness for her young, which requires the same care as a colt and the mother as much as the mare. When the young camel is between four and five years old, they begin to try on the pack-saddle.

The coast of Algeria has no natural good harbors and they must be made at great expense.

Almost the whole of Algeria belongs to the transition order, secondary and tertiary—all the rocks are of recent formation, the greater portion of them being sedimentary. We know that soil composed of these rocks is generally richer than that made by the decomposition of crystalline rocks. Three calcareous varieties prevail up to fine marble; there are clay marls, dolomites, clay schistus, talcose, gypsum and gneiss. Another fact which shows the richness of the soil—the greater part of the mountains still retain a remarkable thickness of soil even upon their summits. I saw no where such peeled bare mountains as we have in the south of France. This is owing to their not being cultivated. In fact when a soil is abandoned it grows plants which perish on it and annually enrich the soil where they grew, and their roots retain the soil from washing away.

The Arabs annually burn the bushes, &c., on their wild lands. The spontaneous vegetation of the country is very rich even in districts which, to the eye, augur badly for their fertility. The Arabs, however, contrive to get from their farms only twelve or fifteen bushels an acre of wheat or barley, for want of manure and proper working; they just scratch the ground making little parallel furrows.

Certain parts of the country are not fertile on account of the sea salt prevailing in the soil. The Sebgha and the Scott are in reality salt lakes towards the interior. The environs of Bône the country comprised between that city, Constantine and Philippville; the plains of Dgigelly and Bougie to a vast extent; the central and southern part of Mitidja; the plain of Chéliff, those of Mina, of Eghris, of Sig and of Habva, as well as the countries which surround the Sebgha of Oran and Hemcen, are deemed to possess the richest soils. To sum up, we may pronounce Algeria, as a whole, one of the fertile countries of the globe.

The chief farming of the Arabs is wheat; they also raise corn, sorgho, (a first rate feed for cattle and horses, a grass,) millet, chick pea, lentils, beans, turnips and cabbages, but not in plenty, tobacco, flax, &c., &c. The Kabiles, the most steady of the people, cultivate trees and vines in their mountains.

Mr. Meigs said, there is much to admire in the following:

"*Planting fruit trees for others.*"—The Spaniards have a maxim that a man is ungrateful to the past generation that planted the trees from which he eats fruit, and deals unjustly towards the next generation unless he plants the seed, that it may furnish food for those who come after him. Thus, when a Spaniard eats a peach or a pear, by the road-side, wherever he happens to be, he digs a hole in the ground with his foot and covers the seeds. Consequently, all over Spain, by the road-sides and elsewhere, fruit in great abundance tempts the taste and is ever free. Let this practice be imitated in our country and the weary wanderer will bless the hand that ministered to his comfort and joy. We are bound to leave the world *as good* or *even better* than we found it, and he is a poor scamp who basks under the shadow and eats the fruit of trees which other hands planted, if he will not also plant trees which shall yield fruit to coming generations.

Annales de la Société d'Horticulture of Paris, et centrale de France.
Dec. 1851. Extracts by H. Meigs.

" Statistics of Agriculture by M. Moreau de Jonnes.—Land in cultivation, nearly fifty-one millions of hectares, equal to 25,623 square leagues, or 230, 607 square miles.

The total yield, vegetable and animal, is valued at 1,500 millions of dollars, of which the gardens yield nearly 31½ millions."

Note by H. Meigs.—Great Britain and Ireland, in 1845, by a report to Parliament, yielded of vegetable and animal value, about 3,000 millions of dollars. It is considered on a fair comparison between the products of France and England, that the latter raises nearly double products per acre, that of France.

The botanical work of Mons. Lasègue, contains a continuation of the labors of M. Benjamin Delessert, who derived a taste for Botany from J. J. Rousseau, who was a relation of the Delesserts. The famous Herbal, preserved by them so carefully at their country seat, is the work of Rousseau, made by him for his young pupil, Mademoiselle Delessert. This Herbal is open to all persons. The names of the plants are written in Latin and French by Rousseau's own hand.

M. Lasègue proves that the first Botanical Museum was that of Conrad Gesner, at Zurich, Switzerland, in 1560. Afterwards, the museums of Thurneissen, Basle, of Mercati, in Tuscany, about the year 1600, then the collection of Sir Hans Sloane, and lastly, Sir Joseph Banks, who owned a rich Herbal and grand library. The Delessert Herbal contains 86,000 species, represented by 250,000 specimens. The Herbal of Lemmonnier, of about 10,000 plants, forms a part of the Delessert; among them are the collection of Commerson, who accompanied Bougainville in his voyage around the world, of Labillardier, who visited Mount Libanus, a chain of mountains in Turkey in Asia, whose summits are always covered with snow.

Those of Desfontaine, who explored Algeria, and last, of Michaux, who collected in Persia, and the United States; further, the Herbal of Burmann, (the father) and the son. In this great collection of Delessert are found a small Herbal, collected in Lapland, by Linnæus himself, with the title Flora Laponica, the Herbal of Humberg, the grand Herbals of Ventenat, of Palisot de Beauvois, of Thuillier—a crowd of plants collected by Gaudichaud, Perrotet, Sieber, Despreaux, Drége, Blanchet, Le Prieur, Kotschy, Bové, Aucher, and finally, one of the grand collections given generously by the British East India Company to botanists.

A list is given of all the exploring botanists, of distinction, in the world. These are men of all nations, 15 English, 9 French, 6 German, 2 Swiss, 2 Dutch or Belgian, 4 Italian, 2 Russian, 1

American, 1 Dane. It is painful to say that the greater part of these travelling botanists die in their dangerous explorations, Twenty-two are named between 1811 and 1844, some by murder, and some by disease of a frightful character. Antoine Petit was devoured by a crocodile, in the river Nile. Cunningham, of the Sidney Botanic Garden, of New Holland, was massacred by savages, Banks and Wallis were drowned in the Oregon, Douglas fell into a pit prepared for wild cattle, and met a frightful death.

The library and museum of Delessert has 6,000 volumes, which contain 4,350 works, by 2,500 different authors.

[Revue Horticole, Paris, 1851. Translations by H. Meigs.]

Onion of Nocera.—This is a small white onion extremely early in its growth. Mr. Audot brought the seeds from Italy in 1840. Sowed by the side of our earliest white onion, it grows almost as rapidly as a radish, and is a bulb when it has but three or four small leaves. We believe we recognize in this the true little white onion of Florence, which we formerly had and lost long ago. This is a very pretty variety, excellent for pickles or ragouts, but unfortunately too difficult to keep here in France. They make much use of it in Naples, and it is chiefly cultivated at Nocera, a little village near Mount Vesuvius, from thence Mr. Audot brought the seed.

[Annales de la Societe Centrale d'Horticulture, Paris, 1851.]

Gardens of Kew.—One of the most interesting objects to an amateur of the garden is (without exception) the gardens of Kew. Nothing is more worthy of fixing our attention than its beautiful situation and vegetable riches. It has for a long time enjoyed a justly high reputation.

About the middle of the seventeenth century, on the spot where the garden now is, stood the country seat and vast park belonging to Sir Robert Bennett, His only daughter married Lord Capel, and brought him an immense fortune. Their daughter and heiress, Lady Elizabeth Capel, married M. Molyneux, then private secretary of the Prince of Wales. Molyneux was a great astronomer and of great learning, and made at this seat some important discoveries among fixed stars with an instrument of his own invention. The estate was hired by the Prince of Wales, and about the year 1730 the pleasure gardens there, comprising 170 acres, were commenced by his widow, Augusta, Princess Dowager of Wales. She took great pleasure in giving activity to the works by her presence for a long time. She obtained the aid of the most distinguished men, among whom we mention Sir W. Chambers. A great part of the decorations of the garden of Kew is due to Count De Rule. The Princess Augusta confided to an able gardener the exotic plants which occupy a great number of conservatories, especially the most beautiful and richest to be seen in all England. The Duke Archibald, of Argyle, sent from his sumptuous gardens at Wheston, near Hounslow, a collection of the rarest trees and plants as presents to the Princess. It was not until 1789 that George IIId definitively acquired the residence at Kew. He demolished the house. The now called Palace of Kew is simply of red bricks. To speak of all the vegetables which fill the numerous conservatories would be a difficult task. I shall content myself with a glance at them. First—I point out the great glass hot house on account of its size; its position in a wood, has nothing equal to it in London or its neighborhood. It is confided to Messrs. William Hooker and Smith. It contains the most remarkable vegetables; the Cedars of Lebanon, the Gutta Percha tree, the vast flower, Victoria regia, Ivory palm, Caoutchouc, the Wax palm, a great variety of the textile, the dye, the oily trees and plants, the Bread fruit, the gigantic root of the Kigelsa Nubina, which somewhat resembles the potato. Among the Orchidea the elegant Anselia-Africana, with its flowering branches of great size, blooming annually; the Cypress of Chapultepec, which sometimes attains a circumference of 39 feet. The Australian glass contains leguminous plants, Acacias fragrant, some with singularly shaped foliage; many beautiful Epacris and magnificent specimens of the Protea and the Banksia, both unique in Europe; Indian Fig trees, with their pendant branches reaching the earth, &c., &c.

The Hand Tree.—Chiranthodendron, named by Humboldt and Bonpland, Chierostemonplatanoides—belongs to the family of the Bombacea.

(The Hand Plant or Manita, same plant, has no petals in its flower, it has a large angular calyx resembling a leather cup, from the centre of which rises up a column bearing five narrow, curved anthers with a curved style in the middle, these have considerable resemblance to a hand furnished with long claws.—*Lindley—by H. Meigs.*)

This tree has been in the museum of Natural History for forty years past, and has flowered for the first time in May, 1850. It is easily multiplied by marcottes, (layers,) which form for themselves perfect roots.

The London Quarterly Review of January, 1852, gives a review of the existing books on the subject of these gardens.

" Everything relating to Kew indicates what a vast quantity of *vegetable prey* we are constantly taking, by the industrious hunting of our employés all over the world. In George 3d's time, five acres were considered sufficient to contain all the hardy trees—such was the Old Arboretum. Now, two hundred acres are not thought too much. In 1851, the private herbarium of the Director of Kew gardens, contained one hundred and fifty thousand species of plants, which number, however astonishing, falls far short of those yet to be discovered and collected. Mark the Caricature Plant, with bright green leaves, something like the Bay-Tree, but marked down the middle with yellow blotches, the outline of many of which bear a very accurate resemblance to the human face, more or less divine. Here is the Duke, and here Lord Brougham, dos a dos (back to back,) on the same leaf. There is Pitt; Punch and Judy seem the principal characters on the next. That little pot plant *Dorstenia*, shows a curious fructification. It is sometimes like a flat piece of green leather, growing at the end of a flower-stalk, and is in fact a flat, open receptacle of minute flowers, visible with a magnifier. It is a strange intermediate form; for roll it up with the flowers outside, and it is a bread-fruit; with them inside it is a fig.

" Observe the chocolate nut tree, *Theobroma cacao*, 'food for the Gods,' putting forth flowers from the thickest part of the woody trunk, to be succeeded by nuts in the same situation, instead of on the twiggy branches. Here are the deadly Jatropha, the towél gourd, (Luffa Ægyptiaca,) from the tropics, used as a wadding for guns, and as a sponge. The epidermis of the *Andromachia igniaria*, of Quito, is used as a tinder. The *Pottery tree* of Para, the bark of which is burnt and ground, and the ashes mixed with clay to make vessels, it enables them to *stand fire* without breaking, &c., &c. The visitors at Kew in 1850 numbered 179,000. By the close of September, 1851, had reached 308,000. The government gives Kew seven thousand pounds sterling per annum for its support, ($35,000.)

"Gardeners consider it a great privilege to pass two years in completing their education here. They have recently been provided with a small library and reading room. Those who distinguish themselves receive a superior testimonial."

Thomas Godwin, a member of the American Institute, presented to the Institute the following pamphlets and documents solicited by him from various societies and institutions recently in Europe, viz.: The Organization and Management of such Institutions, The Carrying out of Exhibitions, The Results, The Prizes of the Great Birmingham and Midland Counties Cattle and Poultry Show for December, 1851, also of the Great Smithfield Agricultural and Cattle Show for December, 1851, their Rules and Modes of Management, their Catalogues, with an account of the breed and mode of feeding, and the Prize Lists, What Mode of Feeding is best for Gaining Prizes, Agricultural Catalogues, and Pamphlets, and Circulars—all these illustrating the mode of doing the business on a great scale—The Most Valuable Implements, The Various Systems of Agriculture as Appliable to Various Soils, Their Uses of Hollow Bricks, Drain Tiles and Pipes and the Machines for Making Them, Copies of Lists of Prizes in England, Account of Asphaltum Roofing Felt.

Subjects for the next meeting, Plum, Apricot and Nectarine.

The Club adjourned to next Tuesday at noon.

H. Meigs, *Secretary*.

AMERICAN INSTITUTE,
Farmers' Club, March 30th, 1852.

Hon. ROBERT SWIFT LIVINGSTON in the chair; H. MEIGS, Secretary.

The Secretary read the following papers prepared by him.

[Annales de la Societe Centrale D' Horticulture, Paris, September, 1851. Translation by H. Meigs, December, 19, 1851.]

Report by Mr. Payen on the Preserved Food of Mr. Masson.

Gentlemen—The remarkable invention, born in your midst, to which I alluded on opening this session of the society, received at its very origin your encouraging approbation and the aid and support of many of your members, for we all comprehended the great value of the object.

Mr. Masson, the author of these ingenious processes so simple and so economical, has long ago proposed the methods of preserving vegetables by drying. He contrived to manage the heat so as not to let it be greater than 40° Centigrade, i. e., about 106° of Fahrenheit—so high in fact that the juices of the plants would not coagulate and, therefore, would remain in such a state that they would afterwards resume the water and soften their tissues, and these, on being boiled, would be as fresh vegetables, the taste and smell (la saveur et l'arome) agreeable and hardly modified. The articles prepared in this way unite all the desirable qualities of fresh ones—these take up too much room in a vessel besides not keeping. M. Masson has obtained all this by compressing them into regular cakes as hard as beech wood; these are packed in boxes and stowed away so as not to incumber the vessel on long voyages.

This new process differs from the old plan of Mr. Appert, our fellow-citizen, in use from twenty-five to forty years among all commercial people, for it furnishes the vegetables in one-tenth part of the volume of the Appert method, and experience has proved the durability of these cakes; they have been on board ship on long voyages of four years and found to be excellent.

Digitized

When these vegetables are to be used, all that is necessary is to steep them for forty-five minutes to one hour in warm water, then boil as long as we do fresh vegetables, and they swell gradually and resume their size nearly and the pliability which they had when first gathered from the soil. The boiling takes an hour and-a-half to two hours. Various committees from the Navy, the Academy of Sciences, the National and Central Society of Agriculture and your Society have proved the good alimentary qualities of these cured vegetables, particularly various sorts of cabbages, celery, spinach and others, all so necessary for the health of sailors on long voyages.

In fine, it seems to us beyond a doubt that medicinal and aromatic plants, selected in their own countries where their useful properties are most developed and their cultivation least costly, may be most advantageously preserved in this way for *quality*, space, for the use of all, especially armies, navy, hospital. All these consequences of Masson's invention have been highly appreciated at the Universal Exhibition in London. Your council has decreed to him the gold medal of the Minister of Agriculture and Commerce.

MEIGS ON ANCIENT TREES.—Modern investigation of coal and lignite strata has proved the existence of trees of the same orders as those now existing. In the Brown coal strata are found coniferæ and other trees of considerable magnitude growing among the famous palms, ferns and cycadeæ of the old world. At Bonn, on the Rhine, in a bed of lignite, or brown coal, Noggerath examined a tree the rings of which were seven hundred and ninety-two; and at Somme, near Abbeville, in the north of France, oaks have been found in a turf-moor, which are fourteen feet in diameter—a very remarkable growth out of the tropics. These huge ancient trees are few, so are our modern large trees such as the Baobab, the red pine of California and the gum of Australia. Lindley believes our modern trees to be probably (some of them) four thousand years of age. If, as we may believe, the old trees were laid before our moderns began, then we have testimony by their rings of some seven or eight thousand years from the beginning of their growth.

[Revue Horticole, Paris, 1851. Translated by Henry Meigs.]

NEW PLANTS CULTIVATED BY MR. LINDEN AT BRUSSELS.

Fuchsia nigricans, bears a great number of flowers of a blackish tint.

Aphelandra grandis, a large and fine plant with leaves a foot long, oval pointed, about eight inches wide, the flowers of a very bright vermilion color. Originally from the Northern declivity of the Sierra Nevada of Merida.

The *Wallichia densiflora*, (dense flowering Wallichia,) is originally from India. Discovered first in Assam by Wallich, Jenkins and Masters; afterwards on the first bases of the Himalaya. Hooker found it 800 metres above the sea. It may probably be acclimated in the south of Europe and perhaps in France.

This palm is Monoick, that is, its flowers are both male and female on the same stem. Its male flowers are extremely remarkable, they resemble a large shaped (ovoide) head more than a foot in diameter, inclining and formed of large imbricated bracts, much like those of the Artichoke, of a beautiful purple color striped with yellow. At the moment of flowering these bracts open and let you see coming out of them little bunches of flowers, male, almost pure white. You may readily conceive the ornamental effect produced by these thousands of flowers, surrounded by their large purple colored bacts. Now add to this a set of leaves about six feet in length, and you will agree that the Wallichia densiflora is a plant to be introduced into every conservatory. It has been in the gardens of Kew & Chiswick, for three or four years past. It is readily propagated by taking the suckers from the roots and planting them.

Cantua dependens. This flower met universal admiration at the last splendid exhibition at Chiswick, Mr. Lindley, says, (borrowing his own words) that it is the most glorious plant that has yet arrived from the west, as wild as the Fuchsia, it resembles much, the most brilliant species of that beautiful flower—and above all, by its long tubular flowers, which vary in their colors having the richest tints of yellow, purple and violet. Unfortunately we lack details as to this precious acquisition, which has never left the garden of Messrs. Veitch at Exeter, except to shine for a moment in the exhibition.

ORCHIDEA.

[Annales de la Societe Centrale d'Horticulture, Paris, 1850. Translated by H. Meigs.]

M. Pescatore, of St. Cloud, had 424 Orchids flower, in 1849. Among them many of great beauty, and some very singular species. The Orchid *Bollophyllum barbigerum* is very curious. It is covered with brown hair, which is set in motion by the least current of air. *Houlletia brocklehurstiana* is, without contradiction, one of the most beautiful of Orchidea, for its figure, beauty, and odour of its flower. The leaves are over 12 inches broad; each false bulb bears two bunches of flowers, each stem and flower being about 20 inches high, furnished with a dozen flowers. It flowers twice a year here regularly, in July and August. It is very easily cultivated. Plant it in a very large pot well drained, filled with *turfy* earth, mixed with fragments of earthen ware During its growth, water it abundantly, and when the bulbs are well nourished, give it some weeks repose. *Angræcum bilobum*, a charming little plant, uniting in tufts, giving a pretty effect. It bears 15 to 20 white flowers, in the form of a star. That the flowers may present themselves well, they should be planted in a basket filled with turfy heath soil, mixed with fragments of earthen ware, hung up. The *Lælia autumnalis* has rose-colored flowers. *Ponthieva maculata* is very beautiful, varied colors with green spots.

Lentil.—Its culture is successful in England, on recent experiments. It succeeds when planted in alternate rows with beans. Its quality as food is now highly praised, and its cultivation earnestly recommended.

Mr. Kruger, of Lubbenan, announces that he has cultivated the *black lentil* with success as well in reference to its quality as its quantity. He also praises two kinds of peas One called Princess Olga, and the other Emperor of Russia, both of good quality and yield. The Princess, an early—the Emperor, a late pea. He mentions a giant bean, very good either green or ripe; pods a foot long.

An inhabitant of Courland announces to the Society the discovery of a plant, proof against cold, found in the far north, which multiplies in an extraordinary manner from both roots and seeds, the tubers of the size of a man's fist, which yields about one-half starch of the first kind ; a specimen of the starch is laid before the Society. The Society thinks that it is the Stachys palustris. The subject will be further examined.

Mons. le Vicompte Debonnaire de Gif, presented a pod of Aromatic Vanilla grown in the hot houses of the museum. Mons. de Gif remarked that this Vanilla acquired a sweeter perfume as it grew older, and he thought it superior to that imported.

NEW-YORK, *March* 20, 1852.

To the American Institute of the city of New-York:

In the volume of Transactions of the Society for 1850, is an account of the cultivation of Madder in this country, and also in Europe. It is stated to have been successfully cultivated in this country, but to what extent is not mentioned, and can hardly at this time be accurately known.

About 1843 Mr. Roman Watson, formerly a merchant of this city and New Orleans, bought some land in Illinois, on the Mississippi river, near Quincy. He selected a farm which he named Hat Grove ; it is in Monmouth county. He turned his attention to the cultivation of madder, and had sold two crops of dried, marketable madder, averaging 2000 lbs. to the acre, when he died, in February, 1848, with quite favorable prospects in the madder business. His farm was also a sheep farm, and for this purpose it was purchased by his brother, Mr. George Watson, who succeeded him. He says the madder his brother raised was far superior in quality to any brought to this country; that it made *brighter colors* and took *less quantity* to dye the same weight of cloth.

Mr. Watson has communicated to me their mode of culture, which is as follows:

"The ground is made mellow by deep plowing, early in the spring. About the time we plant corn is the time to put out the madder sets. Here, where land is plenty, and we wish to do as much as we can with the team, we lay off our ground into double rows one way through the field, 12 feet from center to center. If the soil is not quite strong, plough out a deep wide furrow and fill with manure, then throw the earth over it from both sides with the plough; then set two rows of madder, three feet apart; plant 12 inches apart in the row for the plants or sets; make holes with a sharp pointed stick or iron bar to receive each one, and then close the earth around it. The weeds must be kept down by frequent ploughing, and that will keep the earth in the right state for use as it is wanted. When the young plants are 10 inches high take long handled shovels and lay down the tops, spreading them in every direction, then cover them with the loose earth, as much as will let them live, leaving the ends just uncovered; as soon as they get up again about the same height, cover them again in the same way, the top all the time making root. The first season this should be done three or four times, and just before frost comes cover up entirely with soil; the second season plow and cover, in the same way, three times and cover up in the fall before frost; the third summer nothing is necessary to be done but keep the weeds down and dig in August. Rows twelve feet apart where land is plenty as here is more convenient than closer; but where labor is cheap, and hand labor is the principal labor, eight feet apart will do.

"This prairie soil is right for growing the madder root. We have a deep, mellow, rich soil—no stone, roots, or grass in the way; we have only weeds to keep down, and that is easily done with the plow where the plow can reach them.

"Mr. William Hanna, seventeen miles from Hatgrove, has purchased my brother's madder roots and has gone largely into the business, and has from forty to sixty acres under cultivation; has machinery for grinding and rooms for kiln-drying, and can give any information in that branch of the business which I am unable to do. He invented a machine worked with four horses to raise the soil and place it on the bed; but I do not know whether he was able to dispense with hand labor. He is an able and thorough-going farmer, and I presume would take great pleasure in imparting any useful information he may have in relation to the business. His address is Monmouth, our county seat."

The consumption of madder in the United States is now very large in dying and printing cotton goods, and I know of no reason why it cannot be successfully raised in this country. Mr. Hanna's four horse machine may prove to be valuable, and, like the American Horse Reaper, may overcome the disadvantage of high wages.

Thinking the foregoing account of the cultivation of madder at the west may perhaps be of service, I submit it to the society.

CALEB SWAN.

Professor Mapes.—The subject of the day is Plum, Apricot and Nectarine. I will say a few words. Our garden plums had their parentage in Asia and southern Europe, but they are now naturalized in this country. The soil of our middle States is particularly well suited to plums. The Jefferson, the Lawrence's favorite and the Washington plums prove that. They are equal to any of the plums of Europe. There are three kinds, indigenous to this country. The *Chickasaw plum*, (Prunus Chicaca, *Michaux.*) The dwarf Texas plum is the same. The *wild red or yellow plum*, (Prunus americana, Marshall.) The *Beach plum or Sand plum.* (Prunus maritima, Waug.)

The uses of this fruit.—As a dessert fruit it is not so digestible as the peach, unless it is positively fully ripe. Used for pies and tarts. Dried plums, for sweetmeats. In the south of France the plum is fermented with honey and distilled.

It should never be eaten unless ripened *on the tree.* The size very much increased by thinning out when they are about half grown, no two plums should be allowed to touch each other on the tree, for one of them will probably rot. As is well known the dried fruit from Europe are plums by the name of prunes.—As to the culture. The stocks should be raised from the seeds of any free growing sorts of plums, *except the damson, which cannot be worked.* The stocks should be budded when two years old, with the finer sorts. The seeds or stones should be planted (as soon as they are gathered,) in broad drills, as in planting peas, and one inch and a half deep. In the following autumn, remove them to the nursery rows and bud them the coming mid-summer, say, on the 10th day of July, or when the bark will permit. Insert the buds on the north side of the stock, to protect them from the sun, tie a bandage over more tightly than for other trees. The Muscle, Brussells and the Pear plum may be probagated by layers. The stocks from layers are not superior to those raised from the Blue gage and red Horse plum. The seedlings of the *Mirabelle* are used for *dwarfing*.

The tree should be pruned but slightly. When they are pruned or wounded, a solution of gum-shellac should be used to cover the place. Old trees may be headed down, when they have become barren, and by care of the cut places, the tree will grow fruit again. It prevents the loss by flow of the gum. Good top dressing should also be given to the roots. As respects the soil for plums. Heavy loams or clayey soils are best. Columbia county of this State, is well suited in these respects and the plum flourishes there.

The *Curculio*, the great enemy of this fruit, finds it hard to bury himself in such soils, while he delights in a light warm sandy soil. Kellis is a good soil for plums; common salt is one of the best fertilizers for them. The knots is a disease of the bark and the wood, forming large black lumps, cracked and uneven. This disease attacks the tree of the purple fruit, and never the green or yellow kinds, until their neighbors have become filled with the knots. Common Horse plum and Damson, seem to fail first. With care this disease is easily extirpated; remove every imperfect spot and *burn it immediately*. A very bad tree should be burned up.

Judge Livingston—Presented a quantity of seed of the German Kail or Borecole, which were distributed among the members.

Professor Mapes.—I plant this seed in August or September, they come up and attain some size before frost, I prick them out in cold frames and in the spring put them out. I thus get them one month earlier. And so it is with all the Brassica (cabbage kind.) My cold frame plants bring me a dollar while the others bring eighteen pence.

Hon. Ogden Edwards.—My father, Pierpont Edwards, loved his garden, and he had a large one. He was in the habit of raising young plants, especially lettuce, in the fall, covering them for winter with cedar bushes. This protected them from freezing and thawing. It is not freezing that injures them, but the repetition of the process. I believe that peas bear frost very well, and by this treatment can be made to come much earlier to market.

Prof. Mapes.—I passed some time on the farm of the well-known William Cobbett, on Long Island. He tried experiments of that kind, but did not succeed in getting earlier results, nor so full crops, or so good ones.

Judge Edwards.—Some farmers have believed that grain which has passed through the stomach of horses, was fertilized and thus benefited.

Prof. Mapes—Stimulating manures used in the drill will answer quite as well. The regular subject of the day should be continued. I was much pleased lately with a new substitute for figs. Our friend Mr. Downing, of Newburgh, has practiced a preparation of peaches with paring, white sugar, and drying in an oven, which I think was like the best figs, but more delicious. Stoned cherries treated the same way. Canfield, of Newark, New-Jersey, has budded ten thousand peach trees, without losing one. Soaked bass fibre is used only to tie it. No salve.

Mr. Van Wyck.—The plum is said to be a native of Asia. This is of little consequence to us, provided it will grow well in our country, which it does, in almost any part of it, especially on getting acclimated. This has been shown by many years' experience. It grows well north and south of us; better, it is thought, north than south of our latitude. It grows well in most of the eastern states, in our own state, both the north and western part of it, and as far north as Canada, and, we believe, in most of our western states. Latterly, since the plum tree has suffered so much from insects, it grows better north of the Highlands than south of them. The insects, though, especially the curculio, supposed to be its most destructive enemy, are travelling north, and making ravages upon it as great perhaps as anywhere. Paving the ground of the plum yard or place where they grow, with brick or stone, so that they cannot get into the earth, nor out of it so readily, is said to be a preventive. This is too expensive a remedy for most of our growers of the fruit to any extent, even if it would have the effect intended; but we are told that one gentleman who tried it on Long Island, said it only answered for a year or two, and then they appeared to infest his trees in as great numbers as ever. This, of course, must be considered as no preventive. I should think poultry or pigs having the range of a plum or any other fruit orchard, would be not only a cheaper but surer remedy. Certain seasons we cannot expect to destroy them entirely. We can only diminish their numbers, and this is some relief. In Europe, England, France, Spain, &c., they grow the plum very fine and in great numbers. They generally have the same enemy to encounter we have, insects. In France, Spain, and Portugal, they dry a great many plums, and export them under the name of *prunes*, which means *plum*. Some kinds are better for this than others; the Perdrigon plum, for instance; in this state, when cooked, are said to be wholesome and highly medicinal. The plum, to be wholesome to eat in any way, must be ripe. They are more pernicious than any other unripe fruit. There is considerable trade carried on with us in prunes. The money we pay for these, might be saved to our country if we would attend to the process of drying ourselves. It is very simple; it is done by the oven and sun, but mostly the former. All smooth, thin-skinned fruits are more preyed upon by insects than others, such as the nectarine, apricot plum, and plums generally. The nectarine is of the peach family. The skins of these are pleasant to the touch of insects; they are very nice in their feelers; they puncture them easier and penetrate the interior. The plum and some other fruits have been found growing wild, in the deserts of Arabia—in the *oases*, or districts where certain plants and fruits will grow tolerably well with little cultivation. Different tribes of Arabs who occupy these sections, and cultivate them in their way, generally get food enough from them for their subsistence, and that of their animals. The plums they gather when ripe and dry, and carry them to the nearest cities and towns, such as Cairo, Alexandria, &c., and sell them; they are in great demand here, being considered very healthy and refreshing in such a climate. This seems to be opposed to the idea that the plum requires a clay instead of a sandy loam to grow well on;

we find them here growing wild in the deserts of Arabia and Egypt. That the plum will grow well in a clay loam, there is little doubt, but whether they will grow as well and with as little care as in a sandy loam, may be questionable; this last, it is thought, accords more with the nature of the plant. A clay loam must have some sand in it for the plum or any other plant to grow at all, or certainly to grow well. Whether putting a bed of pure clay under every plum tree would protect it from insects, is also questionable, perhaps it might. I am inclined though to think it would turn out as the paving experiment did, a failure. Brick or stone are as hard substances, and would be as difficult for insects to perforate as clay. *Hybridizing* to get a new and improved species of fruit, has been practiced with success for some years; this is by connecting or joining two good and different sorts of the same fruit in such a way as to produce one not only to contain the essence and good qualities of both the old ones, but an improvement of these. Grafting and budding are a species of hybridizing, though not of the most perfect kind; a new fruit is obtained to a certain extent, but the qualities of the tree or plant from which the graft or bud is taken, predominate largely over the grafted one. Sometimes though a portion of the qualities of both can be traced, however small the one may be compared with the other, it is there, and shows the influence of the grafted tree on the connection. The late Mr. Knight, who was more successful perhaps in experiments upon fruits than any other man, hybridized through the flower; at the proper season he dusted the stigma of the one with the pollen of another, and thus obtained a new fruit, greatly superior in most cases to either of those from whence it sprung. He frequently produced in this way pears, peaches, plums and grapes, which have been generally cultivated and are now considered among the best fruits of Europe. Mr. Knight experimented on the plum in this way, and produced the *Imperatrice*, and *Knight's large Green Drying*, two of the best plums now probably in Europe. It requires great skill and perfect knowledge of the organism of plants, from the root to the flower, to perform experiments of this kind with success.

Mr. Francis Kelsey, of 275 Tenth Avenue, New-York, called the attention of the Club to his plan of transportation of honey bees

Digitized

to California; that he has studied the bee and his habits for almost forty years past, and yet does not know the half that is to be known; that there are about one thousand writers on the subject. Mr. Kelsey has transported bees hundreds of miles into the interior of the United States; tried to get them to Florida; lost seven swarms before he learned how to succeed, but did at last succeed.

The honey bee is supposed to be a native of the islands and shores of the Mediterranean sea, from thence spreading over the Continent, from thence to the United States. That is easily done in winter, but in summer their love of liberty is so powerful that they will, if confined, be destroyed by suffocation and by the melting down of their combs. After being introduced in the Atlantic States, they overspread the country until stopped by the great plains on this side of the Rocky mountains—there they had to stop. Many attempts have been made to take them across the plains to Oregon and California, all of which universally failed because the journey could only be made in summer, and the persons trying the experiment did not understand it. After seven failures I succeeded perfectly in carrying them from New-York to Florida and bringing them from Florida to New-York. There are abundance of bees in Florida from whence they were conveyed, some eighty years ago, to Cuba, and now their honey and wax are worth some millions of dollars. The mildness of climate in Oregon and California will prove admirable for the bee. I have the knowledge to enable me to carry swarms there in perfect safety, but I have not the money requisite. I hope that some benevolent capitalist will soon appear to make this admirable transfer of the industrious little creature so delicious and profitable in his labors. The Institute has before this spoken well of my ability in this respect. I should glory in the happy mission of bees to the magnificent United States of the Pacific ocean.

Dr. O. H. Wellington, of 184 Twelfth-street, presented grafts from Boston of the Porter, Revere and Granny Earle apples, which were distributed among the members.

We were much pleased with the presence of Dr. Charles Enderlin, an associate of Liebig. His analyses of the blood and other organic substances of many kinds of animals has given him a high reputation in Germany. He is a native of Geissen.

The Club continues the *subject of plum, apricot and nectarine*, and requests all that can to bring best seeds, grafts, cuttings, &c., for distribution.

The Club adjourned to Tuesday next.

H. Meigs, *Secretary*.

American Institute,
Farmers' Club, April 6th, 1852.

George Dickey, Esq., in the chair; Henry Meigs, Secretary.

The Secretary read the following communications translated and prepared by himself:

BLIGHT OF GRAPES.

[From Herapath's Journal, 6th September, 1851.]

Grape vines, for the last three seasons, have suffered materially from a disease like a mildew upon them, which attacks the grapes when young, stops their growth, and causes them to turn hard, black, and eventually to rot.

For two years, 1849 and 1851, the grapes in Mr. Herapath's green house were thus lost, and every remedy recommended failed. In neither year was one bunch out of several hundred weight saved.

This summer the disease made its appearance with great virulence again, and it was determined to cut the vines down, when a friend advised Mr. Herapath to try the effect of powdered sulphur, dusted over the grapes with a flour dredger. This was done and, for the purpose of aiding it by absorbing the moisture, about half a bushel of unslaked lime was put in the green house and allowed to slake purely by the absorption of moisture from the atmosphere. The result has been the disappearance of the blight and the growth and perfection of the grapes. Besides this, the house has been cleared of an immense number of blue bottles and other flies, which used to prey on the grape. The destruction of the flies is supposed to be by the fumes of the lime, which has been every now and then stirred up and the dust thrown about; but it may be by the sulphur. Be it which it may the flies lie dead about by hundreds, and the grapes are healthy and fine. It is said that a better method is to subject the sulphur to a slow sublimation by heat of 170° or 180° Fahrenheit, with the house close shut up; but we speak of that only which we know.

Herpin's Memoir on Insects Injurious to Agriculture, with valuable plates. From Alexander Vattemare, August, 1851.

The author treats of six insects, enemies of wheat, by the names, 1st. Chlorops Lineata; 2d. Chlorops Herpinii; 3d. Cephus Pygmæus; 4th. Alysia Olivieri; 5th. Apion Apricus; 6th. Calyptrus Macrocephalus.

First, This fly is about one-twelfth of an inch in length, has two wings, and, when magnified, is beautifully colored—abdomen yellow, head and body yellow with dark stripes lengthwise, wings delicately colored.

Second, This fly is rather smaller than the first, very like it in all other respects.

Third, Very like the two former, but four or five times longer and broader; wings delicately tinted like the former.

Fourth, This fly is about one-tenth of an inch long resembling a wasp in shape, body black, wings delicately tinted like the former with black, a black shot on the upper edge of each wing.

Fifth, Wasp-shaped, abdomen yellow, body black, wings like the delicate color of the former.

Sixth.—About one-tenth of an inch long, double wings, the fore one having each a black spot on its upper edge. Pteromalus Pione, about one-twelfth of an inch long, wings colored like the former.

No one can clearly see these small flies with the naked eye A microscope of large magnifying power should be used in order to identify these enemies, because otherwise one might trouble himself with taking measures for the destruction of swarms of gnats or other little insects which do no harm whatever to grain.

It has long ago been recommended to burn light brush or straw on the outside of the wheat field on dark nights especially—as it is said the flies rush into the flames. This should be done when the wheat is in flower.

At any rate we ought fully to know the enemy before we set about his destruction.

Herpin says the best plan is not to plant wheat for a year or two, on land which has had the insect. He believes that they will for the most part perish if a different crop is planted—one which they cannot subsist on.

HUMBOLDT'S COSMOS—OR WORLD—ON VEGETATION.

The interesting view of vegetation from the level of the sea up to the height of that great Colossus of the Andes, Chimborazo, whose height is that of Mount Ætna, and we must pile the Keghi or Mount Athos on the summit of Chimborazo, in order to form a just estimate of the elevation of the Dhawalagiri the highest point of the Himalaya. On its slope, under the shade of the Deodora and the broad leafed Oak peculiar to these Indian Alps, the rocks of granite and of mica schist, are covered with vegetable forms almost similar to those which characterize Europe and Northern Asia. The species are not identical, but closely analogous in aspect and physiognomy, as the Juniper, Alpine birch, Gentian, Marsh Parnassia and the prickly species of Ribes. Note the species which compose the vegetation of the Himalaya, are four pines, 25 oaks, 4 birches, two chestnuts, 7 maples, 12 willows, 14 roses, 3 strawberries, 7 Alpine roses, one of which grows 20 feet high—and many other northern genera. Large white apes with black faces, inhabit the wild chestnut tree of Kashmir, which grows to the height of 100 feet.

On the southern slopes the grains stop at 9,974 feet elevation. Pastures were found by Girard as high as 17,000 feet. Birches at

12,982, copse or brushwood at upwards of 17,000. The line of perpetual snow on the Himalaya chain is from 18,000 to 19,000 feet high.

[London Farmers' Magazine and Monthly Journal, London, March, 1852.]

Value of London Soot.—In *London Labour* and the *London Poor*, we find the following statistics as to metropolitan soot:

	Bush. soot per an'm.
53,840 houses, at a yearly rental above £50, producing six bushels of soot each per annum,................	323,040
90,032 houses at a yearly rental above £30 and below £50, producing five bushels of soot per annum, ...	450,010
163,880 houses below £30 rental per annum, producing two bushels of soot each per annum,...............	327,760
Total number of bushels annually produced in London,	1,100,810

The price of soot per bushel is but five pence (ten cents) and sometimes $4½d., but 5d. may be taken as an average. Now 1,000,000 bushels of soot at 5d. will be found to yield £20,833 6s. and 8d. per annum.

Curious Breed of Fowls.—Mr. William Lee, gamekeeper to Sir William Gordon, at Earlston house, is at present rearing two young fowls of a very curious and novel breed, being a cross between a bantam hen and a common pheasant. The male is nearly a jet black, though the tail is considerably shorter than the parents The female is a beautiful bright red with a black neck. They are about the size of ordinary barn door fowls, and are so tame that out of doors they will pick crumbs from the hand. They are of splendid plumage, and are much admired in this district.

Glass Roofs for Stables, &c.—Tirydail, near Llandillo, the residence of T. W. Sanford, Esq., F. R. S. "It is but five years since Mr. Sanford turned his attention to the cultivation of plants and fruits. He has placed his cows and plants under the same roof formed of glass, at an expense no greater than the roof of slate. The light is found important to the welfare of the cattle and the carbonic acid gas and ammonia to the plants. The shade of the grape leaves is agreeable to cattle. The first house has a single span roof of 96 feet long by 13 feet wide, standing east and west, and by the slope to the south a roof of glass 20 feet wide. Under the glass are trellises of strained galvanized wire $\frac{1}{4}$ inch size placed one foot from the glass, and one foot apart to which the vines are trained at two feet distance from each other. The heat of the cattle keeps out the frost. He is building another 100 feet long. The vines and plants have luxuriated.

Raising Hyacinths.—Two glass vessels are used adapted to each other, so that the flower is seen in one glass, and the roots or another flower in the other, so that the Dutch and English florists have exhibited double glasses, in the lower one of which a hyacinth is in full bloom in water and the upper one in the air. Hyacinth and Narcisses grow best in colored glasses.

Luminous Plants.—Potatoes kept in a cellar in a growing condition, sometimes become so luminous that one can read a book by them. The Dictamnus albus, common in Germany, spreads about it in dry summer evenings, an atmosphere which, on the touch of flame, burns with a blue flame. Some plants emit sparkling light, such as the flower marigold, Indian cress, sunflower, and the polyanthus. Some rhizomorphous plants give out a calm steady light. The milky juices of some plants are very luminous.

Respiration of Vegetables.—They imbibe perhaps as much oxygen at one time as they part with at another, and decaying plants contaminate the atmosphere infinitely more than they purify it, as is proved by growing plants in glass cases, where, although there may be more oxygen by day, and carbonic acid by night, yet a general average is maintained. Many tribes of plants also imbibe nitrogen. It is so with most of those which give out a fœtid odour, as the Chenopodium olidum, or stinking Goosefeet—all the cabbage tribe—the toad-stools and other fungi.

[London Farmers' Magazine, March, 1852. London Farmers' Club, Feb. 2, 1852.]

Guano.—The superiority of the Peruvian guano over all other is now fully established. It is not likely that any other locality will be discovered producing a guano of so high a value. First, it must be where there are large shoals of fish to make food for the birds. Second, it must be far from the usual haunts of men, or else the birds would be frightened. Thirdly, it must be on a coast *where rains are unknown*, otherwise the ammonia will be washed out, and only phosphate of lime left. Fourthly, it must be on an island, or else it will be mixed with sand and earth. Fifthly, it must be accessible to shipping.

Senor Francisco de Rivero, the representative of the Peruvian government at the court of St. James, has a thorough knowledge of the Guano islands. In a report made by him to his government, he estimated the quantity on three islands alone at 18,250,000 tons.

The Guano islands are entirely devoid of the smallest appearance of vegetation; not a tree, not a blade of grass, not a lichen, enlivens the spot. The earth, if there is any on the rocks, is buried at least thirty feet in guano. And yet these islands enjoy their own peculiar blessings under the hand of the Almighty, for a short residence on them speedily relieves sufferers from the gout, gravel, urinary complaints, and particularly those horrible diseases the scurvy, leprosy and king's evil. Many wonderful cures are on record occasioned by a residence there, doubtless owing to the atmosphere being at all times saturated with ammoniacal particles. The Indian Incas preserved the guano with religious care. The Spanish conquerors followed more zealously in their footsteps. At one period it was death to disturb the birds during the breeding season.

Whence came the Seeds?—Spontaneous plants have excited great curiosity, and but little is known as yet on that subject. After the great fire of London in 1666, the entire surface of the destroyed portion was covered with such a vast profusion of a species of cruciferous plant, the Sysimbrium Irio of Linnæus, that it was calculated that the whole of the rest of Europe did not contain so many plants of it.

PLANTS.

Des Genres, Camellia, Rhododendrum, Azalea, Epacris, Erica, and of other cold conservatory plants. By M. Ch. Lemaire: Presented in August, 1851, to the American Institute, by Alexander Vattemare. Extracts translated by H. Meigs.

Rhododendrum in Latin, rhododendron in Greek is rose tree in English. Linnæus established this genus and name in 1758.

The celebrated Swede imported it although it is like any but a rose tree, nevertheless the number, brilliant colors of the flowers, and their extreme beauty (the greater part of them) justify the title comparatively to a certain point. This rose tree inhabits the high mountains of Europe, Asia Minor, of India, and some of the islands near North America. They are low small plants, some of them are reported to be poisonous and narcotic. The leaves of many of the species are known to botanists and almost all of them are cultivated in gardens. Few plants can present so splendid an aspect as groups of Rhododendrums in flower, forming such rich bouquets with all the lively and delicate tints from purple to rose-white and deep crimson, relieved by a broad and vigorous foliage of deep green.

[From Lindley's Vegetable Kingdom.]

Azalea.—Botanists are now unanimous in forming it a simple section of the genus Rhododendrum, and not a particular genus itself. Linnæus formed a genus of it; he is not followed by botanists in this. Azalea does not in reality differ from Rhododendrum, properly called, except in the number of stamina which is constantly five instead of ten, and by the fall of its leaf.

The general name Ericacae given by Lindley in his Vegetable Kingdom includes forty-two genera and eight hundred and fifty species, among which are Rhododendrum, Azalea, Erica, &c.

The Russian Traveller Pallas believed that the Azalea Pontica was the flower from which the bees took the honey which poisoned Xenophon's army; the men fell stupefied in all directions, so that the camp looked like a battle field covered with corpses.

He says that the Euxine honey produces effects like the Lolium Temulentum and these occur in a country where no Rhododendron grows. The natives are well aware of the deleterious qualities of the plant, and it is said that goats which browse on the leaves before the pastures are green suffer in consequence and moreover, that cattle and sheep perish from eating it.

Lindley gives to the Ericacea the plain English name of Heathworts.

ACACIA.—Lindley includes this in the title Fabacea, or Leguminous plants. The term Fabacea means *bean bearers*. Of these there are four hundred and sixty-seven genera and six thousand five hundred species.

EPACRIDS.—Lindley says these are small trees or shrubs, their hair when present being simple. Flowers white or purple, seldom blue, remarkable for their great beauty, and for the singular structure of their leaves. All the fruits of the berry bearing section of them, especially Lissanthe Sapida are esculent, but the seeds are too large and the pulpy covering too thin to be available for food. The Astroloma Humifusum, the cranberry of Tarmania, is found all over that colony.

It is remarkable that only one or two Heathworts are found in the countries inhabited by the Epacrids.

The fruit of the Tasmanian cranberry is green or whitish, or sometimes red, about the size of a black currant, has an apple flavored pulp enclosing a large seed. The stems of the plant resemble juniper. The blossoms are beautiful scarlet.

CAMELLIA.—Father Camelli, a Jesuit, introduced it into Europe in 1739. Linnæus, out of gratitude, named it after him, Camellia. It was originally from Japan, and has been cultivated from time immemorial in China and Cochinchina. In a wild condition it is a large bush, never a tree, rarely grows higher than thirty or thirty-five feet.

The cultivation of Camellia and Rhododendrum is much the same.

[Annales De La Societe Centrale, Paris, July, 1851. From Alexandre Vattemare.]

Culture of the pine apple (Bromelia Ananas) in the north o France, without either fire or manure. By Viscount De Courval.

The forced culture of pine apples has been practiced for half a century, always by means of artificial heat of coal, wood, coke, turf, hot air or steam. We present our practice as hitherto but little known, and as very economical. The experience of some years and the results have been such that we warrant its success. It always requires care and vigilance.

As soon as the leaves of trees, such as oaks, chestnuts, planes, beech or elm, begin to fall abundantly, that is, in the first days of November, I gather them into large heaps, in a dry time, in quantity sufficient for my beds during the year. A few days after I dig, in the dryest and warmest place in my garden, a ditch six feet wide, and long enough to receive my pine apples, and to a depth of about two feet. I fill it with the leaves from my heap, to well heaped surfaces, the whole depth of leaves being about three feet. If it is too dry, I water it with a sprinkler (watering pot.) I then put on this bed of about four feet square, filled with a bed of garden mould, of tan, or even crushed turf, to the thickness of some seven inches, and then cover the whole with glass frames. In a few days the heat in the tan rises to about 75° Fahrenheit, and I then bury my pots (which are about five inches in diameter) in the tan. I fill these pots with *heath soil*, leaving such a space between the pots that each glass frame will cover about sixty pots. The beds being thus prepared, I put the shoots or the crowns of pine apples saved from the fruit on the table, I plant one of these in each pot, and put them immediately under the frames. Take care that the leaves of the pines never touch the glass over them. Be careful to cover them up exactly with straw mats every night. The young plants must be *deprived entirely of air* for about six weeks, at the end of which time I find they have taken root. *During all this time they must not be watered.*

The humidity of the bed of leaves below is enough for them; when you are sure they are rooted, give them a little air during sunshine. In this condition the plants will go through the winter without any further care than heaping leaves close up to all the frames and covering them with straw mats or heaps of leaves or double or triple straw mats, as the cold may require; these coverings are not to be removed except in mild weather and in sunshine. In April make a new bed like the last with this difference, that instead of tan or mould, fill the trench with about twenty inches depth of heath soil and when it becomes sufficiently warm, plant in it the young pines with their soil about their roots, putting six only under one square of your frame. As soon as this is done, cover the soil about them with straw about an inch thick—there they remain until November without any other care during summer than raising the boxes so as to lift the glass above the growing leaves and watering them freely during great heats. If the pines have not been neglected, their growth will have reached over three feet in height by this time In the first days of November your spring bed must be cooled and made over again exactly as before filled with about twenty inches depth of tan or mould, and cover with frames suitable to the growth of the pines. When this bed is warm enough, take up very carefully the plants with a lump of the soil about their roots as big as your fist, and put them in pots of about six inches diameter only, in order that the restraint upon their roots may cause them to fruit the better. Bring the pots in the bed and keep the air off entirely for a month, until their new roots appear; then begin to let them have a little air according to the state of the weather. They will now pass their second winter without danger. When March arrives make a good bed of leaves like the former, adding to it about ten inches depth of heath soil. As soon as this is warm enough, take a warm day in fine weather to transport the plants, and bury pots and plants so deep that you just see the fruit out of ground; after this they require watering during the summer in order to keep the air humid. The rays of the sun should be dimmed by painting the glass thinly over them with Spanish white, and giving them air according to the heat of the weather. The fruit may be expected to weigh, when ripe, from five to seven and-a-half pounds, each about nine inches long by sixteen inches round; they will be matured by November. This cultivation is very economical and little if any inferior in fruit to hot houses, &c.

PLUM AND APRICOT.

Professor Mapes. The nectarine is a smooth skinned Peach, has the habits and growth of the peach, is smaller and inferior to the best peaches but superior to the common and equal to the average sorts of them. The beauty of its appearance its wax like surface render it a splendid dessert fruit. It has the noyeau or peach leaf like flavor.

It is an accidental variety of the peach, sometimes grows on the same limb with the peach. The fine Boston Nectarine originally proved nectarine but sometimes peach.

The tree should be shortened in. It is longer lived than peach and hardier, particularly when budded on the plum stock. Is not trimmed in Arabia. The Curculio attacks it, rags dipped in coal tar and applied to the tree are useful as a protector against curculio. Harlem oil is also, but it is a remedy worse than the disease.

The apricot is the earliest in bloom of almost all fruit trees It grows twenty feet high. It may be grown as a standard south of latitude 42° north. Its foliage is heart shaped. It came from Armenia and Arabia, and is in general cultivation in China and Japan. According to Grosier, the mountains west of Pekin are covered with a natural growth of apricots. As a dessert fruit it is only inferior to the peach, ripens at midsummer, after cherries and before plums, is used when preserved in sugar, in brandy, in jellies and in pastry, and when dried for use, an admirable liquor is made from it. The free bearing sorts are used for drying, largely. It is usually budded on the plum stock, in July. When budded on the peach it is short lived and subject to disease, and gives inferior fruit. When on the plum stock it flourishes in strong soil, and it holds its fruit better than in sandy soils. It is rapid in growth. The seedlings are more hardy and fruitful than the budded stocks. It is a favorite for training *en Espalier.* It should not be exposed to the sun on eastern walls, does best in northern exposures. Shortening is highly recommended for it. It is but slightly liable to disease when budded on plums. The curculio attacks it. It is benefited by proximity to walls, a situation in which an effect appears to be produced something similar to the mulch—such as we see by laying a covering over the soil, such as board or other covering.

Judge Van Wyck.—The apricot, it is said, is a native of the deserts of Arabia, and grows wild in several parts of Asia; its name is supposed to be derived from apricus, open or exposed to the sun, and from præcox·early ripe; hence the Arabic name apricot. The Arabians of the desert gather and dry them in the sun. The common plum is found there also growing wild. They are carried to the nearest cities and towns, being in much demand and considered very wholesome. The apricot is a hybrid formed by nature as many plants are, growing wild and close together, partaking of the quantities of two or more. The apricot was formed no doubt by the union of the peach and plum, partaking much more largely of the qualities of the latter than the former; this frequently happens with hybrid plants. The apricot resembles the plum in many more points than the peach; it is smooth skinned, the pit is precisely like the plum. In flavor and color, there is a slight resemblance to the peach, considerably more though in flavor to the plum. The nectarine, it is thought, was produced by the same union; this partakes much more of the peach than the plum, its principal point of resemblance to the latter is its smooth skin. The great difficulty of raising these fruits of late years, in numbers and perfection, have been the insects. These from the smooth thin skin of the first, easily puncture it, enter the exterior and destroy it. It drops off prematurely, and those that remain on till ripe are inferior in quality. The curculio is the name of the insect with us, that commits the greatest ravages on plums and other smooth skined fruit; it is of the beetle tribe; it is called in Europe and by some here the wevil. Dr. Harris, an American Entomologist, Dr. James Tilton, of Wilmingtou, Delaware, Rev. F. S. Melshiemer, Professors Peck, Say and others, describe this insect minutely, they having seen and examined it, in various stages of its growth. Dr. Harris states that he has found the beetle in Massachusetts, has frequently caught them flying in the middle of the day, and seen them puncturing the fruit. They are from $\frac{5}{20}$ to $\frac{1}{5}$ of an inch long, exclusive of the curved snout, &c. Prof. Mapes does not believe a word of the hen and chickens, confined under a plum tree destroying the curculio that were found upon the ground under it, and were making for the tree and so effectually, that the tree that season bore a fine crop of plums, which it had not done before in several years, and it bore them for some years after. The professor thought that few ever saw a curculio or plum wevil, they are so small they only imagined they did. If he will take the trouble to examine the works of the authors here quoted, he will probably be convinced that there are persons sharp sight-ed enough to see the insect, and intellect equally sharp so as to describe it minutely even to the white spots upon it, and the number of these. The professor stated he could never find one, although he had often tried, and that he would willingly give $5 for half a dozen to put in a bottle as a curiosity. Perhaps some of the gentlemen above named would willingly accommodate him with a few gross at that rate. As to poultry and some other animals, I believe they are a more effectual remedy for the evil than any thing else; every farmer can see poultry on his premises if he chooses, catching insects, and some of these quite small, and this in his fields and fruit yards. I further believe poultry, pigs, &c., not only a surer but a cheaper remedy than paving with stone or brick, or putting a thin coat of clay mortar under every fruit tree to prevent the insect from going down into the earth, or ascending from it on account of its hardness. The paving has been tried and found not to answer, and I think it would be found so with the mortar. As to the proof assigned that the bed of mortar would have this effect, viz., that in clay soils like Columbia county, and near and about Albany, the plum still grows fine, very little disturbed by insects, it is some though, and unless, I am greatly misinformed for the last year or two, the insect has increased much in these districts; the evil began south and traveled north; three or four years ago it was hardly known above the Highlands, now it is as bad there as any where else, and it is to be feared as it travels on north and west it will destroy this fruit there too, and this whether it is grown upon a sandy or clay loam.

Mr. Meigs observed that the perfect apricot and nectarine ought to be greatly cultivated, not only for their most acceptable qualities to the eye and taste of all men, but because they command a very high price; as much as *twelve and a half cents* each, is a very common price.

Judge Van Wyck stated the success attending the culture of the plum, by confining hens with broods of chickens under the trees.

Professor Mapes doubted the hen case very much in consequence of his own experiments, yet that case has gone the rounds of the papers. I kept an hundred fowls in an enclosure of my plum trees, and on a full and satisfactory trial I found that not a tree escaped damage as they do accidentally almost any where. Outside, where I made other experiments with other remedies, some trees escaped damage.

The Chairman asked, what is the best antidote?

Professor Mapes.—Harlem oil is a good remedy, but it is worse than the disease.

Mr. Meigs asked the club if any one of them had ever seen the curculio, which attacks plums? Here are twenty or thirty gentlemen, all of whom desire to know this enemy.

Professor Mapes.—I have seen three or four of them.

Samuel Fleet.—I never could find one. David Thomas, of Cayuga, has caught them by holding sheets under the trees and striking the branches. This insect performs its work in a very short time.

Mr. Meigs.—I have sought eagerly for this curculio all my life nearly in vain, and I am seventy years of age.

The race of curculio is very numerous—some hundreds of kinds—few of them injurious to vegetation. The famous enemy of our wheat—the fly is very small, and it requires very close examination to distinguish it from the harmless gnats. I have seen the likeness of the plum wevil and the fly, and so have most of us who never saw either of them dead or alive.

Professor Mapes. I will give five dollars for a half dozen of them in a bottle.

Judge Livingston.—Can any member inform me how to make the plum tree bear every year? No answer.

Professor Mapes.—There are a hundred insects that poultry will not touch. Who ever saw poultry eating a catterpillar which so greatly abounds?

Mr. Fleet.—Cedar birds devour them voraciously, *especially those on locust trees.*

Professor Mapes proposed as a subject for the next meeting of the Club, the small fruit—blackberry, raspberry and strawberry. Adopted.

Judge Joel Turrill, of Oswego, New-York, presented to the Club Russet and Greening apples produced on his farm. His orchard contains about eight hundred apple trees. The Russet is the Roxbury. I plough the orchard, and have put on at one time twelve hundred bushels of ashes. My trees are old; one which gave ten barrels last year is about sixty-five years old.

The apples here presented were preserved in a very damp cellar in two different ways—one in barrels, the other on shelves one by one. You see that some of them are shrivelled—those were kept on the shelf; those which are quite smooth and round were kept in barrels.

The members of the Club tasted the apples, which were of a large size, and declared them to be very fine, and gave their thanks to Judge Turrill.

Subject for next meeting, on the 13th of April, *blackberry, raspberry and strawberry.*

The Club adjourned to Tuesday next at noon.

H. Meigs, *Secretary.*

American Institute,
Farmers' Club, April 13th 1852.

George Dickey, Esq., in the chair; Henry Meigs, Secretary.

Mr. Meigs read the following papers prepared by him:

TIMBER.

[O Auxiliador Da Industria Nacional, Rio De Janerio, 1851.]

From the file presented to the American Institute by Senor Luiz Henrique, F. d' Aguiar, Consul General of Brazil.

Signs by which we can tell when a tree has reached its maximum of growth, and is beginning to decline.

The bark of trees enables us to foresee the time of the perfection of the tree and its beginning to decay. It requires time, close observation, and experience. The bark of all sorts of building timber first deserves our attention. For without it we ruin our great ships and most costly edifices.

In general the growth and increase of hard strong timber (which is weak in the beginning) augments regularly up to the twentieth or five and twentieth year, becomes uniform from that up to sixty or eighty years, after which it begins to decline. When the growth declines so that last year's is not equal to the average growth of the preceeding years, or which is the same thing, when the timber has attained its maturity, which is determined by nature in the condition of the bark, we take the timber in perfection. We must be careful not to confound disease in the bark with the condition or maturity of the timber, because in that case we have a timber with the seeds of disease in it, which will progressively cause the decay of the wood. The signs of maturity and of decline may be classed in the three following:—1. Those signs which announce vigorous health. 2. Those which announce the ripeness (maturity) of the wood. 3. Signs of decline.

First. The branches, especially the lower ones, show the vigor of a tree being annually grown stouter, and longer, and leaving all over them abundance of lively, bright green leaves, which do not fall until some later in autumn than others. The bark is clear, smooth, fine and uniformly so from the root to the first branches. The upper branches growing larger than the others, is an evidence of vigor.

Second.—*Indications of Maturity.*—Ordinarily, the top of a tree is roundish, but the growth diminishes gradually every year, the limbs augment more than the buds. The tree brings out its leaves very early in the spring, and then turn yellow early in autumn, at which time the leaves are greener on the lower than on the upper part of the tree. The branches commonly incline with the earth at angles from 60 to 70 degrees. These signs and a suitable attention to the soil and circumstances, enables us to judge well as to the character of the timber, and experience enables us to judge even by the bark as to the age of a tree of any kind.

Third. It is to be understood always that signs of a decline in a tree are equally signs of an alteration in the timber. When a tree yet has its whole crown (or head) and a single limb is seen to die at its top, especially in trees standing isolated, apart from others, it is an infallible sign of the commencement of decay of the timber at its head. When trees are infested with moss lichens, toad-stools or mushrooms, or the black rust, they are signs of serious alteration in the bark, and we justly suspect an alteration for the worse in the timber.

ALFALFA OR PERUVIAN LUCERNE OR CLOVER.—Professor Mapes, last year, received from Commodore Glenn, of the U. S. navy, a cask of the Peruvian alfalfa or lucerne seeds. They were distributed at Professor Mapes' request, by the Farmers' club. Mr. Meigs planted some of it. The first growth was quite slender. This morning he was surprised to see the alfalfa quite vigorous in growth, and pulling up the roots here exhibited, carefully, not expecting such length and size, the lower ends are broken off, yet they are over a foot in length, and as fresh as the youngest of annual roots. This is a remarkable fact, because the plant is from the warm climate of Peru, and grew within ten or fifteen degrees south of the equator, in a country where ice and snow and rain have never been known to fall since the day of Cortez and Pizarro; where neither thunder, lightning, nor strong wind have ever existed; yet perfectly unhurt by our last rugged arctic winter. This circumstance raises the character of this lucerne greatly. We judge that it will last several years here, or almost every where, and yield annual crops of some of the finest feed in the world for stock; it may be cut several times in a season. It should be planted in rows, wide enough apart to enable men to go in and cut it as wanted. By calculation we may plant a field large enough to allow being all cut off day by day several times over, and feed the stock we have.

BLACKBERRIES, STRAWBERRIES AND RASPBERRIES.—Mr. Meigs stated that cultivated blackberries were brought to this market thirty or forty years ago from Staten Island, and were everywhere preferred to the wild ones, on account of their perfect figure, large size and ripeness; they brought more than double the price of the wild ones.

Professor Mapes said that Mr. Morton, of Newark, had cultivated them very successfully. The professor mentioned a new mode of growing strawberries, that was by using short pieces of slabs to lay across a bed of strawberries, with notches cut in the edges large enough to permit the strawberry plant to come through. The slabs were laid with their flat side down. The rain was therefore carried down the sides of each slab to the strawberries. No weeds could grow, and the fruit was thrifty.

Mr. Riggs, of Baltimore, observed that the method had one great advantage, that of keeping the fruit free from the sand.

Wm. J. King was requested to speak of a new strawberry, and he said that Jenney's seedling now stands number one in Boston, for certain qualities it possesses. The confectioners prefer it to any other in the Boston market on account especially of its great tenderness and amount of juice, which is double that of Hovey's seedling, and considered to be better than that, but not near as large. It is a good bearer, continuing to bear until fall—thus affording many pickings. Mr. Jenney sells all the plants he can raise; he is a modest man, and has said little about it.

Prof. Mapes.—Raspberries are common to both Europe and America, and are found in a variety of forms. It is a deciduous shrub, its leaves are primate and composed of five leaflets, its flowers are in panicles, its roots perennial, its top triennial, and it produces its fruit on the wood of the former year. The large fruited kind have all emanated from the Rubus Idœus, or Mount Ida bramble, and is now naturalized to most parts of the United States. The thimbleberry, or common blackberry, is to be found wild in our wood, Rubus occidentalis, and the red raspberry, Rubus strigosus, of Michaux. Some kinds grow prostrate others of upright, rising to the height of several feet, and are biennial in duration; but the root is perennial, producing suckers which ripen and drop their leaves one year, and resume their foliage, produce blossoms, shoots, flowers and fruit, and die the next. The leaves are quinate, primate; the flowers come in panicles from the extremity of the present year's shoots, they are white, appear in May and June, and the fruit forms about a fortnight afterwards.

Cultivation and Propagation.—The raspberry is always propogated by suckers or offsets which spring up from the main root, a few kinds may be raised from the seed which produce fruit at two or three years of age, and unlike most other fruits, the seedlings of the raspberry are seldom inferior to the parent plant, and by this means a great number of new kinds have been produced recently, the flavor and size of which are very superior to the sorts previously known. Our books recommend for the raspberry a deep loam, rather moist in its character. This is rather a stereotype direction for all crops, and may be viewed thus: the raspberry in common with all the brambles, is a rank feeder, and is capable of appropriating large amounts of pabulum, and therefore will flourish best where the greatest amount of food exists. Nor is it scarcely possible to over dose it with manures. Blood, night soil, superphosphate of lime, and all the most powerful manures may be applied in quantities to the raspberry, which would destroy many other plants, and it is for this reason that it has been supposed to flourish in deep loams, because such soils are usually the richest. Poor soils, either sandy or clay, and very highly manured will sustain the raspberry with profit. The raspberry is injured less by shade than most of the small fruits. Indeed, during the hot suns of July and August, it seems to be necessary that the mode of training or sustaining the canes should be such as to secure partial shade to protect the fruit. The plants should be placed from three to four feet apart, and two or three suckers in a group. The distance between these groups being regulated by the vigor of the kind or sort. The rows range from east to west, and the north rows should contain the tallest growing kinds, the south rows those of less stature. Early in spring remove the old wood, and also as many of the new shoots or suckers as are required for making new plantations, leaving not more than six or eight in the original groups. In removing these suckers be sure to take a portion of the root. The only trimming required is to cut off the end of the cane left standing for about one foot, as that portion of the wood is always shrunken and will not bear fine fruit, The ground should be thoroughly dug, and plentifully manured. The canes may be tied to rods or wire placed horizontally. To secure partial shade during the hot months, the top of the canes of two adjacent stools are sometimes bent towards each other, and tied together, thus affording a mutual support and the required amount of shade. A late crop may be obtained for August or September, by cutting down the canes over the whole stool in early spring, within a few inches of the ground. Small portions of salt have been used with good effect in manuring the raspberry. New plants are in perfection the third or fourth year, and should be broken up and re-set in a new piece of ground. After six years the finer sorts, such as the red and white Antwerp, the Falstolf and the Franconia should be slightly protected during the winter, north of forty degrees north latitude. Indeed, our custom is to partially protect even the hardier kinds as we find the quality and quantity of the fruit materially improved by such treatment. Bend down the canes late in the fall, placing them in the direction of their rows and throw a shovel full of dirt on top of them within a few inches of the ends, then with the plow cover the whole row once with a few inches of soil. In early spring remove this soil, place the canes in an upright position. For flavoring liquors the common red is preferred, and for cooking, the American black, and the Ohio everbearing, which later kinds give fruit until frost. In stiff soil, a shovel full of muck should be placed upon and around each stool to readily admit the egress of new shoots and suckers.

Uses.—The raspberry is an agreeable dessert fruit, and the finer kinds bring a higher price in the New-York market than strawberries. This fruit is used for preserves, jams, ices, sauces, tarts, and jellies, and by confectioners for making syrups, and by distillers for raspberry brandy and raspberry vinegar. An admirable home-made wine may be made from the raspberry. To one quart of juice add three and a half pounds of triple refined sugar, and as much water as will make the mixture measure one gallon. Place it in a cellar at a moderate temperature, leaving the bung out of the cask—fermentation will immediately ensue, and will continue about eight weeks. By listening at the bunghole, it can be easily ascertained when the fermentation is finished, then drive in the bung, and eight months after the wine may be drawn off and placed in a clear barrel, or in glass.

These domestic wines cannot be made of good quality from the sugars of the ordinary kind. It may be understood thus: sugar contains (until refined,) a small portion of gum, and during fermentation of the wine, this gum becomes fœtid, and its offensive odor can only be overcome at the expense of fine aroma of the wine. If the sugar be pure, it will be transformed into alcohol by fermentation, and the aroma of the fruit will be maintained.

This fruit follows the strawberry in early summer, and at a time when other fruits are not attainable. It does not undergo acetous fermentation in the stomach, and is therefore healthy. Dr. Short recommends raspberry vinegar, raspberry syrup, &c., as a healthful, reviving draught in ardent fevers, and he also recommends it in scorbutic disorders. Many persons believe in its efficiency as a remedial agent for gout and rheumatism.

Judge Van Wyck—We have had a good account of the best manner of cultivating the small fruits, which are before us for consideration to day. Dr. Byrne, a distinguished cultivator of Alexandria, D. C., says the melon strawberry, which possesses blossoms both male and female, he has found answering every purpose, in its proximity it will impregnate other varieties, such as *Hovey's seedling* and *Hudson bay*, causing them, especially the latter, to yield enormous crops. In this way some of the trouble and nice observation about male and female plants may be avoided. The wild strawberry, I think, exceeds every other for flavor. There is no difficulty here about male and female plants, which makes many suppose there is nothing in it. I have seen it grow year after year in fields, if not disturbed, in the greatest abundance, and some of them of a pretty good size. I have seen them transplanted into gardens, and the size much increased by cultivation. The wild raspberry, commonly called *black caps*, from their shape and color, is a very good little raspberry. They grow wild along the fences almost any where, and produce abundantly, if left to themselves. The blackberry with us has got to be an important fruit. There are supposed to be hundreds of thousands of bushels brought to our markets every year; it is almost incredible to witness the quantity every day offered for sale; they sell readily too, and if in good state, at a fair price. They are a little tart, but very pleasant and extremely grateful in hot weather, as most fruits are. This fruit also possesses some astringent qualities, which makes them highly medicinal for complaints of the bowels and kidneys, which prevail considerably at the season when they are brought to market. Blackberry jelly is very good for those complaints, and if properly made, can be preserved a long time, and has a delightful flavor. The roots, too, are often used for the same purpose; they are boiled and a tea made of it, and drank, and relief found from it. There are two kinds of this fruit, one called the standing, the other the running blackberry; the first grows perpendicular from the root a straight stem from four to eight feet high, with short lateral branches which bear the fruit, putting out near the bottom of the stem, and more or less of them until near the top, the berry generally a little larger than the running kind, but not of such a delicious flavor; the medicinal properties of the two are nearly the same. The vines spring up from the main roots of the latter on every side, and run in every direction on the ground; hence the botanic name, *Rubus incumbens*, lying or resting, on or near the ground, if they have a good chance, they are more prolific bearers considerably than the upright kind. I have seen, some years ago, fields of ten or fifteen acres of the former nearly covered with their vines, and so loaded with fruit, as to appear almost black with it. Both kinds no doubt may be much improved by a little cultivation, such as cutting out all shrubs and destroying coarse weeds and grasses. New-Jersey and Staten Island have done something towards this, within a few years, as they have sent vast quantities to our markets of late, and some of the best kind.

Professor Mapes.—The remarks of the Chairman relative to the medicinal virtues of the blackberry, syrup or jam, remind me of a saying of Dr. Franklin on that point, to wit, that he had discovered that the virtue was in the sugar and not in the berry.

The Secretary read the following translation made by him since the last meeting:

[From the Brazilian Consul M. Aguiar—O Auxiliador da Industria Nacional, Rio De Janeiro, October, 1851.]

IMPORTANT DISCOVERY—*A New Tea made of the leaves of the Coffee Tree.*—It is well known that the peculiar aromatic and astringent flavor of the tea of the Indies is due to a principle denominated *theine* by chemists—it is contained in the leaf of that plant.

Now, according to Dr. Gardner, a German chemist, he has found the same principle in the leaves of the coffee tree, and in such proportion as to form an excellent tea in all respects similar to that of India.

To our associate, Senor J. D. Sturz, we are indebted for the first essays on this subject. He sends for some bags of the leaves to continue his experiments. This society will make experiments with the coffee leaves. Some persons who have tasted this new tea say that it is similar in aroma and taste to the Oriental Tea. We are anxious to procure for our readers and our country, perfect light on this interesting subject, which already menaces with destruction the tea trade of the East.

Moreover, Dr. Gardner says that, by a very simple process, he extracts from the coffee itself the bitter principle which it contains, known by the name of *caffien*, and that this is a complete substitute for *quinine*—as effectual in medicine as an antifebrile tonic. If the views and hopes of Dr. Gardner shall be realized, what a vast augmentation there must be of the value of our coffee trees!

[Annales de la Societe Imperiale et Industrielle, Agricole et Horticole de St. Petersburg, 1850.]

To encourage horticulture the Emperor gives to the people of the crown lands, who distinguish themselves in grafting and pruning of fruit trees, premiums in silver from fifteen to twenty roubles, or, if they choose it, a medal of honor to be worn at the button hole.

Digitized

2. To encourage the introduction of new kinds of fruit trees, the sum of five thousand roubles annually.

3. The Minister appeals to the cultivators of trees to publish practical elementary instructions, suited to Russia, of all trees. The Government will pay all the expenses of publication.

All the schools for teaching horticulture are under the protection of the Emperor and at his expense, except one—that is the *Society of the Friends of Flora.* These institutions admit scholars from every class of peasants. A few years ago the teaching of practical gardening was exclusively confined to these schools, but now it is extended *to every village school.*

Gardening Schools of the Second Class.—The course of teaching lasts six years. Poor scholars are maintained by the government. When they leave school, government takes care to see them employed, and after ten years work, if able, they receive an annual sum from government or, in other words, they become pensioners of the State. These second class schools are Jekhaterinoslaw, Pensa, Astracan and Kichenew, formed in 1817, 1820, 1842 and 1843. Government pays them 13,351 silver roubles a year and they have four hundred and five scholars.

Third class.—Devoted to tree growing and nursery. One at Konstantinograd, in Poltava, was founded by the Czar, Peter the Great; one at Wolks, in the government of Saratow, founded about the year 1800; one at Kerson in 1841; one at Woronesk in 1844, at Simferopal in 1844; and lastly, one at Orel in 1845. These five schools contain one hundred and eighty-four nursery scholars.

Vine Culture Schools, at Ackermann, in Bessarabia, at Magaratsch, at Sudak, in Tauris, and one at Kislar in the Stawropol. Scholars are taught to manage the grape. In 1848 these schools had growing 45,681 vines. At Kislar scholars, instead of paying any thing, receive pay and rations.

Beets in Russia.—In 1848 the crop, as by official report, amounted to one hundred and fifty thousand millions of pounds weight.

Three millions of peasants belonging to the estates of Count Alexis Bobvinsky, pay all their dues in beets, which is very good for both parties.

Lotus tetragonolobus, or Asparagus pea, found growing in the Island of Ocsel, by Dr. Johnson, in a wild state, is very much sought for on account of its excellent taste. It grows in rather wet soil to about one and hardly two feet high, and well supplies the place of clover—cattle very fond of it, bush and peas together. It flourishes in places too wet for clover.

Wine.—The Crimea produced, in 1850, six hundred fifty-two thousand three hundred and seventy wedros, twenty bottles each.

["Algeria: By Moll." Presented by Alexander Vattemare.]

The *Agave Americana* is extremely scattered through all Algeria. It is used to make hedges to keep cattle in or out of fields, and it is impenetrable by them. The fibre is used to make cordage, mats and coarse cloths, which are remarkable for their solidity and brilliancy. This plant flourishes in the worst soils. The natives obtain from it a very sugary drink susceptible of alcoholic fermentation, by cutting the flower bunches before the flowers are out and receiving the sap from it in a vessel, which is soon filled by it.

[Annales de la Societe d' Horticulture, &c., Paris, Dec., 1851. Translated by H. Meigs.]

Populus Dilatata, a specific for curing Hydrophobia.—We have often had occasion to mention plants presented as specifics in that frightful malady. The Annals of the Society of St. Petersburgh state, that the Bragora Anthelminthica Kunthii, or the Abyssinian cucumber, recommended in 1847 by Hericourt, had not succeeded in curing hydrophobia. In Bohemia there is a man by the name of Schweida, living at Bzy, who notoriously cures that terrible disorder.

Prince Joseph de Schwarzenberg, from motives of humanity, bought his secret to give it to the profession. After many happy cures by it the Prince gave a house and lands to Schweida for life. The remedy is a powder and bathing. It had been known many years before in the vicinity of Frauenberg by the name of *Powder of Babutsky*, and that all cases of hydrophobia were cured by it. Persons bitten by mad-dogs and having the malady were cured thirty-five years ago and no symptoms have ever been felt since. The powder is made of *Italian poplar leaves, Penny royal and Savory.*

Poplar leaves,...........................	2 ounces,
Penny royal,..............................	4 "
Savory,.....................................	4 "

The whole must be reduced to a powder, well mixed, kept in a phial well corked. A dose of it is taken by good sweet oil mixed with it until its consistence is somewhat soft. Put as much as lies on the point of a knife into a pint of *beer warmed* and drink it three times a day; For a mad-dog mix the powder in a half pint of milk; for horses, spread it on a piece of bread; for other domestic animals mix it with their ordinary drink. After giving the remedy give no food whatever for many hours. The bath is prepared by putting the same constituents into it; let the bath be tepid, that is, lukewarm.

[Journal of Agriculture and Horticulture of the Grand Duchy of Baden, 1851.]

Evaporation Tubes for Hay Mows.—In the lower countries some farmers take care when they mow their hay (especially in wet weather) to place several bags of chopped straw, or hay, in various parts of the heap. As they pile on the hay they continue to lift up these sacks, so that a void is left below the sacks when the mow is complete; in fact these become so many channels for escape of vapor, and so prevent fermentation and the danger of fire, and besides, the hay is better and more healthy for cattle.

A good effect is produced in cabbage and cauliflowers by putting a little charcoal dust over the seeds.

Mr. Fritzche, of the Imperial Society, Russia, recommends the cultivation of a species of Rue, found on the Steppes, for its beautiful carmine color. The Society believes it to be its duty to encourage its cultivation, as it is an entirely new dye.

[Presented by Consul Aguiar, of Brazil—O'Auxiliador da Industria, Rio De Janeiro, 1851. Extracts translated by H. Meigs.]

A brief review of the history and present condition and principles of Agriculture.—In the sixteenth century this great interest was well understood. Sully justly said, *labor and manufactures* are the two *heads of the state.*

The sciences are at work, and agriculture by aid of all of them, is fast becoming *a rational occupation.*

We will finish by saying a word as to its importance. At all times and in all places has the country life been proudly sung for its pleasures and for the purity of its habits and customs.

It ought to be the main work of every government to inspire a love for it, and to develope all its advantages; to impose such restraints on foreign articles as shall protect its own exclusively. For agriculture is entitled to the proud name of *systema protector*, the protecting system.

The invention of the art of printing soon made manifest amelioriation in agriculture. Camillo Torello, the Venetian, taught the alternation of crop and thorough and deep tillage 300 years ago. Herrera, of Spain, Heresbach, of Germany, followed Camillo. Fitzherbert, of England, wrote a book of husbandry, and England began to breed stock. In France, Olivier de Serres wrote his Theatre of Agriculture, to which we owe our first knowledge of the potato.

In the seventeenth century agriculture made progress in general in most countries of Europe, which continues to our days, sometimes rapidly, and then again slowly. The names of the leaders of amelioration deserve to be known: Hartlib the Polish refugee, on Belgian agriculture; Jethro Tull, of England, on drill husbandry; the alternate husbandry of W. A. Kreysigg; Von Thaer, who introduced *English agriculture* into Germany!

Pliny said, (1,700 years ago) that "the earth rejoiced as it felt the movement of the laurelled triumphal ploughman."

Digitized

[Translated from the same.]

The French are very fond of the luxury of fine fruit, and that too very early or out of the ordinary seasons. The ladies assuredly entertain the opinion of the ladies of ancient Athens, that the use of finest fruits increased their personal beauty. However that may be, it is indubitable that fine health depends greatly upon the influence of perfect fruits. The rich in France pay the highest prices for choice fruits.

R. L. Pell, of Pellham—The subject of the pear is before us to day, and I will say a few words about it, as no gentleman seems just now ready to speak.

The pear (Pyrus communis,) was brought from the east by the Romans, by whom they were cultivated with great care. The Flemings, Dutch and French have excelled all other nations in the cultivation of this delicious fruit. Most of our fine late varieties originally came from Flanders and France. Its delicacy and texture is finer than the apple, and it is in season for many months, which are desirable qualities; it is allowed to be generally speaking, full as hardy as the apple, and equally long lived. It has been known to flourish for hundreds of years in a proper dry soil, though it will grow in almost any variety of earth, producing worthless fruit unless properly cultivated, the flavor cannot be luscious unless the soil is deep, well tilled and sufficiently rich to produce a luxuriant growth—there is no fruit tree known that will better repay labor than the pear, it requires liming, ashing, mulching, manuring, scraping, and judicious trimming. During dry summers the soil contiguous to the tree should be frequently stirred, which causes it to absorb moisture for the benefit of the roots, spongioles and fibres, and consequent swelling of the luscious and magnificent fruit. Pears have been astonishingly improved as a table luxury within the last thirty years, through the good management of Flemish and French horticulturists, by whose experiments our people have profited greatly. When fine and aromatic they are infinitely preferred to the apple at dessert. They are divided into summer, autumn, and winter pears.

The best summer pears are the Bartlett, Dearborns, Seedling, Tyson and Jargonelle.

Autumn. Washington, Urbaniste, Seckel, Louise Bonne of Jersey, Golden Bilboa, and Heathcot.

Winter. Beurre d'Aremberg, Glout Morceau, St. Germain, Vicar of Winkfield.

The pear when ripe is very wholesome, but in a green state precisely the reverse, except they be pared and dried gradually in an oven, by which operation they may be preserved for years. If you have any austere varieties unfit for the table, or cooking, they may be advantageously used for the purpose of making a liquor called perry.

The pear tree is subject to a disease known as the blight, probably caused by the sting of an insect; when attacked the leaves present a scorched appearance; the limb should be at once cut off and committed to the flames. Pruning should by all means commence when the tree is planted, and be continued annually, having in view the ripening of the fruit, which can only be accomplished by opening the tree sufficiently to admit the rays of the sun to reach it and the air to circulate about it. If this is attended to, there will never be any difficulty in picking the fruit by hand.

Grafting may be accomplished in doors during the winter season, my usual mode is to take up seedlings of one years growth in the fall, and secure them from the cold winters frost under glass. When the time arrives to graft them, they are cut off to within 3½ inches of the roots, split, and the graft inserted, covered with grafting wax composed of rosin, beeswax and mutton-tallow, and repacked under glass, or in a cellar in the earth, to within half an inch of the top, where they may be left until the buds expand in the spring, when they should be taken up, and set out in nursery rows, fourteen inches apart in the row, and the rows four feet apart; if the ground is well tilled and sufficiently rich, they will grow from four to five feet high the first year. Pears are sometimes, though rarely budded; this operation must be performed in September, sufficiently late to prevent them growing that season. Select a shoot of the seasons' growth, from the tree you wish to perpetuate; with good firm buds and cut off every leaf within a quarter of an inch of the leaf stalk; take the shoot in the left hand and the knife in the right, place the blade on the shoot about a quarter of an inch above the bud—the thumb of the right hand resting on the shoot at the lower portion of the bark to be cut with the bud, then draw the knife towards you smooth and level, exactly parallel with the shoot, so that the bark together with a part of the wood will be taken off. Make a T in the bark of the stock to be budded with the knife, and the bark raised with the handle; then insert the bud, bring back the bark, and tie it down over the bud with bass matting, permitting the leaf portion to project out of the seam.

Value of Mangel-Wurzel Beet.—1. You can prepare a substance which may be combined with, or employed in place of coffee, the mangel-wurzel roots are well washed, cut into pieces about the size of peas, then dried and roasted in the same manner as coffee berries. The product is ground after being roasted, and it is then ready for use. 2. A substitute for tea is produced by cutting the leaves of mangel wurzel into small strips or shreds, drying the same, then placing them upon a hot plate, which is kept at a temperature sufficiently high to slightly char the leaves. The charred mangel-wurzel leaves are to be used in precisely the same way as tea.

3. To manufacture a fermented liquor from mangel-wurzel, cut off the tops and wash the roots thoroughly, then scrape off the outer rind, slice them, and boil till they are soft. The liquor must be squeezed out of them by a press and boiled with hops, in the proportion of six ounces of hops to nine gallons of juice. This is then worked with yeast in the usual way—ten pounds of the root will afford one gallon of juice. The fermented liquor thus obtained is similar to perry or cider. 4. When the mangel-wurzel roots are to be employed in the preparation of wort, they are washed, and cut into small pieces, which are dried or slightly charred, by the action of kilns or ovens, of the kind used for drying malt, and wort is prepared from the produce in the same manner as from malt.

Chairman—The apple tree is one of our subjects to-day.

Judge Van Wyck—The pear is generally considered one of our most important fruits, it is certainly next to the apple in importance, and some think superior. It can be used in as many different ways, or most kinds of them can; and some of the richest and most delicate flavor can be preserved a considerable portion of the winter, others all winter, as well as the apple. Most pears, especially the later ones, improve by being taken off the tree before they get quite ripe, and allowed to ripen off the tree. Good pears are generally preferred to apples as a dessert; they possess a pulp tender and melting, some with the juice of a sugary aromatic flavor, others a little tart, all rich in flesh, and juices delicious to the taste. Those for cooking should be large in size, the flesh firm, not melting, austere rather than mild and sweet. Dried, they will keep for years, if properly done. The French excel in preparing the pears in this manner, they do it by an oven and in different ways, according to the uses they wish to make of them; some they simply dry, others they partially boil in water a little before maturity, peel and drain them, then place them before the oven again, here they remain twelve hours, after which they are steeped in syrup, to which are added sugar, some spices and a little brandy; then returned to the oven, heated to a less degree than at first. This is repeated until they are sufficiently dried or of a clear brown color, and firm transparent flesh, when they are packed away, and, if well done, will keep, and for a long time, and make a rich palatable preserve. As has been stated, a fermented liquor is made of pears of any size, much in the manner of cider, and the best perry is stated to be little inferior to wine, and the most austere fruits produce the best liquor. The French also excel in raising the pear; they have a great many varieties, it is said, 1,500 or more, and some of the best kind; they graft some of them on the quince stock, to make dwarfs or some of a low stature and to improve the fruit, and they are kept short, and by great care in pruning and without excess, they preserve and increase the pyramidal form, which the tree naturally has. They also bend the limbs down a little below the horizontal, and make them grow towards the earth instead of upwards; this preserves the dwarf stature, and they encourage and train the limbs to shoot out from the trunk near the earth.

Thus they can reach the fruit from almost every part of the tree standing on the ground. They make long rows and avenues of such trees which are often seen in the best gardens of France; it gives them a beautiful appearance, especially when full of blossoms, or loaded with the richest and choicest fruit. The French take more pains in cultivating the pear than the apple or peach, hence we presume it must be a greater favorite with them than either of the latter. The French horticulturists procure, at almost any cost and labor, the best kinds from their neighbors the Flemings, Belgians and Germans, all of whom are famous for their pears, especially the Flemings. These the French cultivate either as seedlings or by grafting, and often by their skill make them exceed in quality the original stocks. The English have very fine pears—their moist cool climate and stiff soil suit the pear; with proper care and tillage, the English, perhaps, in the quality and abundance of pears, are equal to any of their neighbors of the continent; their perry will certainly compare with any of them as a healthy, palatable beverage. Some of the best English orchardists complain of late that their pears have declined within a few years in quantity and quality: in some cases the pear does not live to the great age it formerly did, it is subject to a blight which some ascribe to insects and others to different causes, which do not appear as yet to be satisfactorily accounted for. The apple and some other trees are afflicted in a similar way, that is to cause an earlier decline and death, as well as degeneracy of fruit. A few eminent English pomologists as writers and practical men on the subject, think it may be owing to too much pruning and cutting of the tree, for various purposes and in various ways; to prune by lopping off dead limbs and useless sprouts and suckers that draw nourishment from the main body and such parts and limbs as may produce fruit, is correct. Some though cut off large limbs, and when they are as vigorous as any part of the tree, and at a period when the tree is advanced in age; this is often done to improve its shape and form, and to give a more rapid and abundant circulation of sap to the remaining parts, and make them produce more and better fruit; the tree is often thrown into a decline by it and dies. Health and life are here sacrificed to beauty and too eager a desire to grasp after more than nature, when left to her due course, would have yielded.

It is thought by some of the best pomologists of Europe, that in the south of France and Italy, it is best to prune trees sparingly of all kinds, or the fruit, and even tree, will suffer more or less from the sun; these require some shade in such climates to prosper and do well. Professor Johnston intimates the same thing in regard to America. He thinks we cut and prune our orchards too much for our climate. They will not bear as much of this as Great Britain, and he thinks our orchards have suffered by it, and will suffer more if continued. I was told by a practical farmer, at one of our late clubs, highly respectable and intelligent, that he lost, not long since, the greater part of an apple orchard, and some of his neighbors and friends lost theirs in the same way, by pruning them too much, and when too old. *Rubbing* off the *rough bark* of apple and pear trees is very proper, so as to give the trunks a smooth leathery surface, it keeps insects from harboring and breeding under the bark; the tree also receives more benefit from the air and moisture without and the sap within, the healthfulness of the bark, being near the earth, and the foundation of all, influences more or less the health of the whole plant. *Decortication*, or peeling the bark off to the inner wood, to make the tree produce larger and earlier fruit, the late Mr. Knight thought a hazardous experiment, if not done at the proper time and well done, he says a morbid state of early maturity is induced, and the fruit becomes worthless. *Girdling* and *ringing* he is not friendly to, " except only in those few cases where blossoms cannot otherwise be obtained, or where a single crop of very early fruit exceeds the value of the tree." Hence, it would seem Mr. Knight is unfriendly to too much doctoring of even the apple and pear tree, which will perhaps take more nostrums without much harm, than some others. He thought so, especially if the supposed disease required the application of the knife; and no more experienced or skilful surgeon, in handling this, when applied to fruit trees, probably ever lived. The pear will flourish everywhere it is said, where the apple will, from 38 south to 50 north, and probably better between 40 and 47 north, than north or south of these last points. It prospers extremely well in New-England, especially Massachusetts and Connecticut, and we have some of the most experienced, skillful, and successful cultivators of the fruit in the neighborhood of Boston. This has been proved by the very superior qualities that have been produced there at various times for several years past. As for the names of the various kinds which thrive best in our country, and are considered the finest, I must refer those who desire to know them, to Kenrick's *American Orchardist*, a valuable work on most of our important fruits. The pear is a hardy tree—it lives to a great age. There is one in this city, on the old Stuyvesant farm, said to be 200 years old, and one near Boston considorably older. Before I close, I wish to mention a fact which has come to my knowledge, from highly respectable sources, some years since, as well as very lately. It relates to the best mode of procuring seedlings from the apple, pear, &c.—that is to plant the whole apple as taken from the tree, the seeds enveloped in the flesh and pulp, without breaking or disturbing either. The seeds thus treated, when they come up and grow, it is said, are sure to reproduce, in every respect, the original fruit. The great difficulty has been in planting seeds in the old way, to get one seed out of a thousand, and oftener more, to reproduce the same fruit, or scarcely resembling it in any particular. It is supposed to be owing to the pulp of the apple infusing its essence or powers of propagation into the seed, and the two containing an embryo more perfect of the future plant, produce a more exact likeness of the fruit of the parent tree. This plan, I am crebibly informed, has been tried years ago, and succeeded. Now the course is grafting—this effects the same object sooner it is true, but perhaps not more certain, and at the expense of cutting and mutilating more or less the tree grafted on, and that from which the grafts are taken. The American motto of "*go-a-head*," is applied to every thing, and generally we have not the patience to wait for the result of a few years, even with the fair prospect of greater profit, ultimately.

[For the Farmers' Club.]

To produce a good and early orchard.—Take the suckers of crab trees—such as have not been grafted—split them off from the root of the parent tree under the surface of the ground so that they will have roots to them; plant them in the nursery or garden in spring, at the usual time of planting, the second spring cut them off level with the surface of the ground, scrape the earth away to give room to put on the graft, so that its top may be even with the ground.

When the graft has three out-shoots about three or four inches long, level up the earth or mould around the stock and graft, so that nothing may appear above ground but the new sprouts, in this way the graft will throw out roots, so that the young tree will have the support of its own roots and also of the parent stock. The young tree will bear every year and in four years from the time it is grafted. A FARMER.

To H. Meigs Esq., *Secretary of the Farmers' Club.*

Professor J. J. Mapes—The pear is the favorite fruit of the day. Worthless in its natural state, so that even the choke pear, is an improvement upon the natural and still not edible. The pear was not really developed in perfection until the seventeenth century, (see Downing, page 317, (Pliny) Van Mons of Belgium, (the Eden of the pear tree) has 80,000 seedlings. The pear is not a native of North America. It grows wild in Europe, Western Asia and in China. In its natural state it is hardier and longer lived than the apple. Mr. Rose mentions several pear trees as known to be four hundred years old. One tree in Home Lacey, Herefordshire, England, has yielded *fifteen hogsheads of perry in one year.* One at Vincennes, in Illinois, is forty years old, and at one foot above the ground, it is in girth ten feet and at nine feet above, it is six feet and an half, and it is enormously productive.

The Stuyvesant pear tree, planted by Governor Stuyvesant, of *Irving Memory*, on his farm, now part of this city, more than two hundred years ago, is still standing. It is a summer pear, similar to the Bon Chretien.

The pear is for the dessert, it is cooked; it is dried in ovens in France and Belgium.

Perry made from pear is richer than cider; is made in the same way. The yield of perry per acre is one third more than that of cider. The wood when stained black is an excellent im-

Digitized

itation of ebony, and it is largely employed by turners for making joiners' tools. The leaves will dye yellow. The gathering and keeping the fruit is very important. It is finer flavored if picked from the tree and ripened in the house than if allowed to become fully matured on the tree. There are a few exceptions to this rule, and but a few. The pear should be picked when its stem yields easily by raising it. For winter dessert pears, see Downing, page 319. As to propagation of the pear tree: Graft or bud the finer sorts upon seedlings, not on suckers, for the latter will make poor roots, and reproduce suckers; but if they are used as stock, they should be young and thrifty. Seedling stocks from seed of common hardy pears are the best. Seeds should be planted in deeply trenched soils of rich loamy character, well supplied with potash, and transplanted into nursery rows when two years old. The treatment of both the seeds and stock is similar to that of the apple. A one year old seedling is often winter killed. Thorn is a good stock if grafted below the ground, if grafted above, it breaks off by high winds. Thorn stocks are good for strong clay soils—they come earlier into bearing. Grafting on mountain ash renders them more hardy. If budded on, the apple it is short lived. Take the quince stock for dwarfing, it bears very early. Large pears which are sometimes blown off by winds, are improved on the quince, and many others are improved in flavor. Large pear trees cannot be profitably transplanted, as the roots are too small. Small thrifty plants are to be preferred.

As to the proper soil, situation and culture, strong loam and dry subsoil, for habitually damp soils will not do. The red kellis is good; it is so at Elizabethtown. Too rich loams render them tender, hence the western alluvials will not do; they suffer by winter blight. In such soils plant on hillocks; in muck and river mud, on sandy soils, in cold soils, plant on southern slopes; in warm soils, on the northern slopes.

On the ends of the limbs of the Queenville pear I have suspended stones to cause the limbs to become more at right angles with the tree, for it is an advantage to the fruit; but not so with any stone fruit, such as peach or apricot. The pear trees should be about thirty feet apart; but in gardens, headed in, twenty feet apart. The diseases of the pear are pear-tree blight, fire blight, insect blight, frozen sap blight. In June or July the new wood will turn brown and the leaves black, in two days, and the wood hardened, and this continues down to the place where the insect is located. The Scolytus Pyri (the insect) leaves the tree the moment the harm is done. It deposits its egg, in August, behind or below the bud. To remedy this cut off the branches affected one foot below the disease as soon as it is seen and burn the branches.

The Frozen Sap Blight.—For the pear tree too rich a mulcher manure throws fœtid water into the soil, which the pear takes up and then has to throw it off as excrementitious matter of which it always has much to throw off. The late growing sorts are most liable to disease. Mucilaginous matter is formed between the wood and the bark, which freezes in winter and makes shrivelled spots on the bark. Lay bare the roots by removal of the mulch in the fall to check late growth. Lime induces fruit spurs, while azotised manures make long soft wood.

Rev. Mr. Carter described a wooden case with shelves, with open wire work on its outside, to admit light and air, which is taken to the tree, and as the fruit is carefully picked by a small hand machine or by hand, it is put into this case until it is filled by some four or five bushels. This case, according to weather, is kept out or in doors, and is carefully turned upside down every day, until the fruit is properly prepared for keeping. Here the pears ripen. This plan is good also for curing pared and cut apples—it admits free circulation.

Mr. Cameron, from the house of E. G. Roberts, 68 Pine street, presented for examination Claussen's Flax Cotton, and cloths made wholly or in part from it—shirting, sheeting, &c. He stated that now in England, a pound of this flax cotton is made and sold for six cents, and that it can be made and sold in this country for four to five cents a pound. The members examined it and were surprised generally at its remarkable resemblance to cotton. It can be seen at any time at the store of Mr. Roberts, 68 Pine street.

Among the seeds distributed were choice ones of many sorts, from the Hon. Thomas Ewbank, Commissioner of Patents, Mr.

Cozzens, of Jersey, and others, to whom the thanks of the Club were voted unanimously.

Mr. Meigs.—Ralph Hall, Esq., of the Institute, requested me to notice the action of roots of trees on our Croton Aqueduct, as stated in the December report of Nicholas Dean, Resident thereof, and the opinion of Dr. Torrey.

"The line of aqueduct, passing as it does for many miles through a rich and populous country, intersecting several villages, and studded in its whole length with country seats, frequently cutting through orchards, court-yards, gardens and pleasure-grounds, subjected the owners, in its construction, to great annoyance and inconvenience, to lessen which as far as practicable, the Engineers in charge of the work, as well as the Board of Water Commissioners themselves, did not rigorously insist upon the removal of all trees and shrubbery from the grounds purchased, through which the structure was to be built, but left them often in close proximity to the line of excavation, and within such distance as rendered it too probable that the roots might, at some future day, reach the structure and penetrate through the brick work. This anticipation has been verified. During the examination of the interior of the Aqueduct in December last, it was found, in the vicinity of Sing Sing, that the root of some tree or shrub had found its way through the crown of the arch, *penetrating the cement* in which the bricks are laid, which is as *hard* as the bricks themselves, and had reached, in six months, a length of more than twenty feet. As no tree was growing within a distance likely to send its roots to the point where these were found, some curiosity was felt to ascertain to what particular kind of tree it belonged; it was therefore carefully removed by Mr. Tracy, placed in water brought to the city, and submitted to the examination of Dr. Torrey, from whom the following letter was received."

COLLEGE OF PHYSICIANS AND SURGEONS,
67 *Crosby-street*, *Jan.* 16, 1851.

Dear Sir—I have examined the vegetable matter taken from the Croton Aqueduct, which you left with me yesterday. It is not a fungus, or any other unhealthy material, but consists of the roots of trees (probably of the willow,) which have penetrated minute fissures of the masonry, and, on reaching the cavity of the Aqueduct, where every thing was favorable to their development, have attained to an enormous length. The introduction of these roots is no doubt injurious to the masonry by their mechanical action; for, by their gradual increase of diameter, an irresistible force is generated, which will, in time, produce great displacement of the stones. The growth of trees immediately over, or even very near the Aqueduct, should be prevented, as they may cause serious damage to this invaluable structure.

JOHN TORREY.

Prof. Mapes mentioned instances of the filling up of gutters with roots.

Mr. Meigs mentioned the case of a well on the corner of the 9th avenue and 20th street, filled with roots from a small willow at some distance off.

Judge Livingston exhibited on behalf of Mr. Wilson, a small bottle with grapes in it, of the charter oak vine, and these grapes were generally an inch in diameter, and many on one bunch. Some members of the club remarked that the grapes in the bottle looked more like pickled onions or tomatoes, than grapes. The history of this wine is from Messrs. Sheldon, of Stafford, on whose farm it was found—a single accidental vine growing next to the stump of an oak tree. They have cultivated it for ten years past. It is said to be a very sweet and tender grape, and a great bearer; is ripe about the middle of September. It is hardy; requires no covering in the winter. Messrs. Horatio Holmes and John P. Wilson, of No. 579 Grand street, New-York, have the vines for sale.

Mr. Thomas F. Devoe, of Jefferson market, invited me last week to see a hog on Mr. Craigin's stall, which weighed alive one thousand four hundred and thirty-seven pounds. The animal did not appear to be oppressed with fat, and to have been able to walk freely. It was of a good figure. I observed to Mr. Devoe that about the year 1817, I went with Dr. Mitchill and others, to see a hog which had been brought up by John W. Jarvis, the distinguished portrait painter, at his house in Lispenard street, in this city. It was white, looked as large as a cow, was almost too fat to stand up. It was said to weigh fifteen hundred pounds, and as well as I recollect, it was subsequently exhibited, and its weight &c. mentioned in some newspapers of the day. The size of these animals is remarkable, almost inducing a belief that it is peculiar to this continent. And it is, at all events, a powerful evidence of what knowledge and industry can accomplish in altering the native ox of 500 pounds to 4,000 pounds, and the ancient hog of length, size, 400 pounds to 1,437 pounds. Man does this with animals, and he builds ships proportionably larger. The old merchant ship of 300 to 500 tons, is already 1,500 to 2,500 tons.

With regard to the size of the cattle which we admire, we hope that genius and industry will be applied to breed, and raise healthy creatures. Let us get rid of the too common disease of the livers of cattle.

Question for next meeting;

The culture of *quince, currant, and gooseberry;* the grafts, the most of which were presented by Vice-President Pell, from his great orchard, and some seeds were distributed. All friends of the garden were requested to bring best specimens of fruit grafts and seeds for spring distribution. The club adjourned to Tuesday next, at noon. H. MEIGS, *Sec'y.*

AMERICAN INSTITUTE,
Farmers' Club, April 20, 1852.

Hon. ROBERT SWIFT LIVINGSTON in the chair; HENRY MEIGS, Secretary. Members in attendance, twenty-four.

The Secretary read the following translations and papers prepared by himself.

IMPORTATION OF DRIED BANANAS INTO ENGLAND.

[Revue Horticole, Paris, March, 1852.]

An interesting fact occurred at the late World's Fair of London, that is, dried bananas from Mexico—the observations of the distinguished botanist Lindley on the subject. In 1834 Colquhoun, of the Royal artillery, communicated to the Society of Arts of London many specimens of bananas gathered on the warm plains of Mexico, called *Tierra Caliente*, and dried for keeping. The cities of Jalisco and Mechoacan do quite a business in it. They gather the fruit when perfectly ripe and expose it to the sun on bamboo riddles. When they begin to wrinkle they peal them, and then, in a few days, the banana is dry. During the operation the bananas become covered with a sugary effervescence like the figs of the South when dried in the same way. The bananas are then baled or boxed up, either in their own leaves or something else. They are pressed into packages of about an hundred pounds weight. Thus prepared they are in the same condition as figs, dates, raisins of commerce. On account of their sugary character they keep a considerable length of time.

The specimen deposited in the Crystal Palace was a portion of that which was presented by Colonel Colquhoun in 1834, at which time the fruit was two years old. On examination by members of the Society of Arts, it was found to be of a proper consistence, neither too soft nor too dry, and a very agreeable peculiar taste, something between that of date and fig without any trace of acidity. They have no seeds and so become entire for consumption without any deduction. It was deposited in a Magazine of Woolwich, where it remained until taken out for the exhibition in the Crystal Palace; it is, therefore, now nineteen years old—an interesting circumstance testing its great durability. This old fruit was subject to the examination of the Horticultural Society of London, of the Society of Arts, Naturalists, and of merchants, and pronounced to be in the same state as in 1834, except being dryer. No acid--the same taste—no insect had touched them. What dried fruit have we, says Dr. Lindley, that can compare with this? Our raisins, figs, and dates would be completely lost in so long a time as nineteen years; if not destroyed by time, they certainly would be by insects.

This remarkable fact raises, says Dr. Lindley, the very important question of extensive commerce in dried bananas. British Guiana, Jamaica, &c., can produce unlimited quantities. The amount of dried figs and raisins imported into England in 1850, was nearly four millions pounds of figs, and nearly twenty-eight millions pounds of raisins. This shows how great may be the quantity of bananas.

No plant that is cultivated yields per acre any alimentary substance in such great quantity as banana. The potato is by no means equal to it. We will quote the learned men (savans) who have lived in or visited equatorial America—men whose knowledge and veracity are incontestable. "In New Grenada, says Mr. Humboldt, "they raise about forty to fifty tons per acre. It is at any rate a very large crop, and can be grown in quantities equal to any named, and its remarkable durability vastly increases its commercial value, keeping good many years.

[Revue Horticole. Extracts by H. Meigs.]

Young Elms of Hyde Park in the Crystal Palace.—When it was proposed to enclose the elms in the palace, the honest people of London with one voice cried our—"Our beautiful trees will be destroyed, they will perish with the heat, with dryness, or be suffocated by the dust." A special committee was appointed to take care of the trees, viz: Dr. Lindley, Mr. Paxton, and other learned botanists. After these trees had been covered by the Palace for six months, they cut off several young branches and compared them with similar branches on the trees in open air. The first had grown in six months from five to seven feet, while the latter had not grown quite one foot.

The trees in the Palace were carefully watered three times a week, and fire engines were used to sprinkle them from top to bottom, to the great terror of exhibitors, in order to wash off all the dust which was constantly rising from the crowd below and settling on the leaves. The trees in the transept, over which no cloth had been suspended, and where the full rays of the sun came in, were the most fresh and vigorous. It is a fine evidence of the high benefit of glass conservatories for vegetation when proper care is also taken of the plants.

Prussian Road Borders.—The Prussian Government has published an ordinance of a remarkable character relative to plantations on the road sides. The poplars, especially the Italian, are proscribed. The trees now growing are to be removed in order to be replaced by other sorts. One exception, however, is made as to poplars, and that is the *Canadian*. The trees to be planted are to be according to soil, &c. The ash, willow and the various maples on marshy soils; the larch and other conifers on silicious lands; and where the roads traverse populous districts the planting of any other than fruit trees is prohibited absolutely. The English journals are very merry at this; they say it is a queer document. But we see in it a proof of the spirit of order and of respect for property, which generally reigns throughout Germany. If France was so planted with eatable fruits along road sides, the trees would be mutilated, and branches broken to get at the fruit at least a month before they were ripe.

It is well known that in Picardy and Normandy, where the roadsides are often planted with apple trees, they take good care to plant none but cider apples, which the people call *thieves' apples* because, when bitten, they take people by the throat.

[Revue Horticole, Feb., 1852.]

Longevity of Seeds.—It is a question of the highest interest for practical horticulture, but still enveloped in obscurity, and that is the duration of vitality in seeds. Our gardeners all know that the seeds of cultivated sorts lose their germinating power in a short time, when collected and preserved in our accustomed way. The story of those beans taken from the Herbarium of M. Tournefort, and which it is said germinated after being a hundred years in the Herbarium, leads to further views of native growth. Observation all over the globe has proved that after the destruction of a forest, we behold another one of a different tree take its place. How comes this? Evidently from the ground, where the seeds of this new forest were buried, and where they have lain lethargic for want of air, warmth, and other conditions necessary for their germination. But then, when we reflect that some of these forests have been there for centuries, and even for some thousands of years without change, and the improbability that the seeds of other trees, some of which are quite large, would be either brought by winds from great distances where these trees grew, or that they were buried in the ground before the forest began. But vegetables appear on earth dug from depths more or less deep, which were never known there before. This has been often observed in England. We are forced to believe that those seeds have been buried there from time immemorial, and kept sound out of the reach of all atmospheric influences.

Among other instances of longevity of seeds, the grains of wheat found in the tombs of Egypt. That these have vegetated on planting has been treated with ridicule, although many enlightened men in England and Belgium do not doubt it. But there is a case which Mr. Lindley and many other English savants must admit to be authentic.

Mr. Meigs--About 16 years ago, a dentist of Dorchester, by the name of McLean, desiring to give an account of the alterations produced in human teeth, by a long space of time, dug up near Maiden Castle, in presence of many lovers of Archeology, one of the ancient Celtic tumuli, which are found in considerable numbers in the south-west of England. At about thirty feet deep from the surface of the ground, they found a coffin, in which were the remains of a skeleton and several articles of ornament. Upon a minute search of the contents of this coffin, there was also discovered among the bones, at the point corresponding with the stomach, some matter, dry and blackish, very similar to old soil. This was collected by McLean. On examination in the light, it was discovered to contain a great number of ovoid (egg-shaped) bodies, which were readily known to be raspberry seeds, their outside integuments were greatly altered. The discovery excited deep interest. Some of them were presented to the duke of Sussex, president of the Horticultural society. Some of the seeds were broken, and found to have a vitality. It was therefore resolved to plant them. Six seeds were given to the duke, who told his young German gardener, Mr. Hartweg, to plant them in the hot-house, not telling him what they were or whence they came, but that it was an experiment merely. The spot of each seed was very carefully marked. At the end of a few weeks, four of the seeds came up, afterwards one of these perished, the other three attained full growth, and are now growing in the garden of the Horticultural society of London.

The most obstinate unbeliever of this account was Prof. Henshaw, of Oxford, who demonstrated, as he supposed, the utter impossibility of the thing by argument heaped upon argument. His opposition provoked Mr. Lindley to the inquiry, the result of which leaves not a shadow of a doubt of the veracity of Mr. McLean, nor of the incontestable antiquity of the seeds. Mr. Lindley, who had himself handled them, and marked the alteration in their envelopes, and who witnessed their germination, is positive that they were buried with one of the ancient natives of Great Britain. He had seen 169 other raspberry bushes grown from those seeds. The illustrious savant, Lindley, places the date of the burial of these seeds in the time of the ancient Britons; and are at least as far back as the invasion of the Romans, into Great Britain, about 1,700 years ago. And he supposed that the chief or warrior, with whom they were buried, must have been killed a few moments after having eaten them, as the digestive power of his stomach had not had time to affect them. Besides, it is well known that raspberry seeds are endued with great vitality.

The following fact is still more extraordinary. It is an observation made by Mr. William Kemp, the geologist and botanist, who stated it in writing to the learned Chas. Darwin. He says:

"At a quarter of a mile from Melrose, on the banks of the Tweed, there is a quarry of sand belonging to Mr. John Bell, of Melrose, which has been worked a long time. This quarry is dug on the side of a hill entirely formed of sedimentary deposits, fifty or sixty feet above the present level of the river. At 25 feet depth a workman dug up a quantity of remains of plants, some of which had their seeds on. Messrs. Lindley and Kemp planted these seeds and raised about one-tenth of them. They proved to be of four kinds, viz: *polygon convolvulus.* Some of these are dyes, some astrigent, partake of the nature of rhubarb, &c.; *rumex acetosella,* of the same race papilionaceæ; the *atriplex patulo*, one of the chenopods, a race including spinach, beets, mangold wurzel, &c., &c.; and the *atriplex angustifolia.* It is believed beyond a doubt that, formerly, there was a lake at this place, whose waters were as high as the stratified bed where these seeds are found, but no history tells us of the time when that lake existed, or of any considerable sinking of the waters of the Tweed. When the Romans arrived in Great Britain, it is certain that part of Scotland was very nearly of the same configuration as it now is. These reflections naturally lead us to the conclusion, that the seeds in question belonged to a prodigious antiquity, perhaps to the paleotherian epoch, that they were growing, therefore, before the creation of man.

The longevity of seeds of vegetables is, as yet, but merely sketched out. Discoveries in this line will be great for practical use and for science

THE APPLE AND CIDER OF NORMANDY.—All the apples make cider; but all do not yield a cider equally good. The first thing to be done then, is to procure seeds of the best kinds to form nurseries. The tree growing on a poor soil is preferred for cider, therefore the nurseries are generally placed along the coast, without fear of their consequent exposure. The soil is shallow in many places. They plough the ground and where the pebbles are too plenty, they make use of a pick axe; when the place is once gone over, they then give it slight spadings, and cover it with ferns in summer. It often happens that the ground becomes troubled with dogtooth grass. This they exterminate wholly. The first crop of apple trees is usually at the end of seven or eight years, and they hardly ever get 15 or 20 good apple trees out of a thousand. The second crop of good ones is nearly double that. They go on until there remain none but sound, straight, healthy trees. An immense quantity of young trees are produced in the nurseries of Normandy of an inferior quality. The best apples, however, do not yield the best cider. They keep their cider in large casks, which preserves it better than small ones.

ROSEWORTS, OR ROSACEÆ.—Lindley, in his vegetable kingdom, calls the blackberry, raspberry, and strawberry, *roseworts;* of which the genera number thirty-eight, and the species five hun, dred. They are chiefly remarkable for the presence of an astringent principle, and they are by some reckoned febrifuges. The roots of some of them have been used for tanning. The leaves of the arctic rubus, (raspberry,) and the rosa rubinosa, are employed as substitutes for tea. They are employed medicinally in many cases.

Mr. Van Wyck—The proposer of the subject being absent from indisposition, I will make a few remarks by way of opening our conversation to-day on the matters before us. The *quince tree* is one of low, bushy, spreading shape, full of leaves, and these pretty large, and of a deep green, the fruit roundish and oblong, rather of an austere but aromatic flavor. It is a native of Austria and other parts of Europe. It is supposed to have had its origin in Candia, an island of the Mediterranean, and known as ancient Crete. Cydonia is the name of one of its principal cities, hence the scientific name of the fruit *pomum Cydonia.* The limbs grow crooked, unshapely, and are apt to twist into one another. This natural habit of the plant cannot be corrected to any advantage by art. Let nature take its course in this, experience has proved it to be the best, very little pruning, except taking out old decaying wood, and useless shoots and suckers. The quince is raised from seeds, layers, and cuttings—require a very rich and moist soil. It is customary not only in our country, but in Europe, to plant them on the margins of brooks, rivulets, and in vales that are rather low, if not swampy. The appearance of the plant while growing, and after attaining some size, its dark, thick, luxuriant foliage, large, thick limbs, all show that it requires and absorbs much moisture. No doubt the plant would grow on high, rich ground, and bear good fruit, but not as fine as in soil differently located. The quince is not eaten in a raw state; the pulp is hard and uninviting; juice harsh, but cooking in any way there is hardly any fruit that equals it, to mix with pears or apples for pies, tarts, jellies, and preserves, properly sweetened and cooked, they impart their high aromatic flavor to everything. As a dessert in any shape, they are unequalled. As preserves, they should be previously immersed for ten minutes, in boiling water, this prevents them from becoming hard. The French make great use of the quince; they make a very good wine of them, and *liquers* of various kinds; these are medicinal. The French graft their pears upon a quince stock; it improves the flavor of the former, and also produces a larger and more beautiful fruit, and in greater quantity.

GOOSEBERRY.—The gooseberry is a native of Europe and America—a low, branching, prickly shrub; although found on many parts of the continent wild, they do not attain the perfection there they do in England. In Spain, Italy and France, they are very little cultivated. A moderate temperature and humid climate seem best to suit the fruit. The fruit is thought to be cultivated in greater perfection in Lancashire, England, than any other place in the world, being larger and of a finer flavor. When ripe, certain kinds of them, as there are many varieties, are very good without cooking; they are excellent for dessert in any way, cooked or uncooked. The English make a good wine of them, very little inferior to champagne. Niel, a celebrated cultivator of small fruit near Edinburgh says, "it must be admitted that although the largest gooseberries make a fine appearance on the table, they are deficient in flavor, or their skins are thick and strong, compared with some of smaller size." The greatest enemy of the gooseberry is mildew, or rust. This annoys the growers of them much in Great Britain, and it troubles us some here. There are various remedies for it. Warm, sultry, close, moist weather, and the fruit located in low, moist ground, where there is not free circulation of air, is supposed to be the cause. In England and Scotland they generally plant the fruit on the highest ground they have, and in this way escape much of the evil. Ventilation is the great object; keep the neighborhood of the shrub clear of everything that obstructs free circulation.

CURRANTS.—Currants are one of the most abundant, useful and easiest raised of the small fruits, used in various ways, in pies, tarts, jellies, wine. Good pies can be made of them, when they are a little more than half ripe—not so sour as when fully ripe, and take less sugar. No jelly perhaps can be compared with the currant; it is very pleasant to the taste, and healthy; it cools and refreshes the system much, especially if feverish and heated. There are several varieties of the currant. The three principal ones are red, white and black; the red is most used, a little larger than the white, more juicy and more acid; the white is but a variety of the red, both natives of America and the north of Europe. They grow best in a temperate and rather cool climate. The black currant is of a distinct species, a native of the north of Europe and Asia; it cannot be used for as many purposes as the other two; it possesses some medicinal properties, either made into a jelly or wine. The red currant makes an excellent wine, if properly made, and when it gets age, five or six years old, it will compare with any for flavor. I have drank it five years old, made of the pure juice. The currant requires a rich soil, and although so easily raised, they are larger and produce better with a little cultivation. Mr. Niel, of Scotland, prunes his bushes in mid winter, shortening the last year's growth to an inch and a half. The ensuing summer as soon as the berries began to color, he cuts off the summer shoots to within five or six inches above the fruit, this he does with garden shears, and does it rapidly. They last longer than most small fruits, and insects seldom disturb them. Quince seed is medicinal, when boiled down to a proper consistence, the liquor is emollient, it sooths and softens local inflammations of the system, and especially of the eyes, by bathing the inflamed parts with it, and not only relieves but often effects cures. All the fruits here noticed are cheaply and easily raised, and in abundance, compared with many others, and none of them much disturbed by insects; always sell readily in our markets and at paying prices.

The secretary quoted Downing's very valuable work on the Fruits and Fruit Trees of America; refering to the raspberry, blackberry and quince: He observed that a single individual even in the long time he had lived (70 years) was utterly incompetent to the great history of things. That an assemblage of tens of thousands of enlightened men in every age and country was necessary to accumulate the knowledge we now have. And no man can attend even a small meeting of enlightened men conversing upon a familiar topic, without being more enlightened, in some point or other.

Professor Mapes could not be present to day, but was so kind as to send the following notes, as the subject had been proposed by him:

STRAWBERRIES.—The strawberry is a native of temperate latitudes, and the natural strawberries of different climes have different habits. All these have produced several distinct classes and until a late date these classes were represented as the scarlet, pine, wood and Hautbois strawberries. The name strawberry probably arose from the fact that straw was placed between the plants to keep the fruit clean.

It belongs probably to colder climates, and in the warmer is of inferior qualities.

To the confectioner the fruit is of great value, as it communicates its flavor readily to all menstruums, such as milk, sugar, jellies, &c. It is the most healthy of the fruits, not being subject to acid fermentation on the stomach, and is supposed to be a specific for gout.

PROPAGATION AND SOIL.—All sorts except the Bushalpine propagate themselves by runners which, in turn, are used to form new beds and should be taken off in August and put out in place. Some growers retain them until spring, keeping them in nursery row until required. In the planting of new beds avoid runners from old and barren plants.

During the fruiting season the bearing plants may be marked with small sticks placed in the ground so as to enable the operator to select plants from those so marked. Many kinds deteriorate so much by age as to become useless, while others do not lose their power of bearing fruit even by very great age. Among these may be named the Prolific Hautbois, the English Wood and the large early Scarlet; but the Pine strawberries and some Scarlets are very liable to deterioration.

SOIL.—The roots of this plant pass deeply into the soil, therefore the beds require deep disintegration and thorough preparation, with sufficient fertilizing material to last out the proposed age of the bed. Trenching or deep plowing should be used.

The strawberry requires full exposure to the sun and air. They should be cultivated in rows, wide apart, and kept entirely free from weeds. The usual distance with the large growing kinds is two feet between the rows, and a similar distance in the row. The runners should be removed two or three times during the season. Small vegetables may be raised between the two rows for the first year. Too much surface manuring of putrescent manures causes strawberries to form leaves instead of fruit. They should always be mulched in winter, for this system gives larger and higher flavored fruit than when the mulching is neglected. The bed is in perfection the third year, and after the fifth or sixth, should be renewed. Some of the larger growers cultivate in *alternate strips*. The plants are put out, in April or August, in rows three feet apart, and the runners of two adjacent rows thrown between them and suffered to take root, leaving alternate beds and alleys of three feet wide each, the plants being one foot apart in the rows. In the middle of August, when renewals are required, rake the runners over into the paths, which should have been previously manured and dug, and then dig under the old beds. In this manner the beds may be alternated as often as required. The Alpine and European wood strawberries grow well in shade.

The bush Alpine strawberry has no runners, and may therefore be used for ornamental borders. They continue to yield fruit until late frost. By pulling the blossoms from strawberry plants in May we can sometimes obtain a good crop in September. Where very early crops are required, they may be procured by planting on the south side of a wall, and for late crops late kinds on the north side. The best kinds for these purposes are the Duke of Kent and the large early scarlet. Many remarks were made on the best kinds of plants to produce hybridization among those of imperfect organism; both pistillate and staminate plants being necessary to produce fruit among those plants, the blossoms of which are not furnished with both pistils and stamens. Jenney's seedling was very highly spoken of as the favorite strawberry among the Boston growers. The black prince was said to be the best flavored but a shy bearer. The Hovey's seedling is a good market strawberry of large size and a prolific bearer, but inferior in flavor to many others. The aroma of the strawberry is entirely resident in the surface or cutis, and this is materially increased by the addition of small doses of tannic acid added to the beds in a very diluted state. One gallon of bark liquor added to one hundred gallons of water is quite strong enough for this purpose and adds materially to the quality and product.

Professor Mapes.—The quince is supposed to be a native of Europe. In its natural state it is a crooked, rambling bush of eight to ten feet high. The upper side of its leaf is green; its under side of a more whitish tone, bearing fruit on the shoots of the same year's growth. The fruit is large, of an orange tone of color, austere and disagreeable in its taste, but possessing fine aroma. When in fruit this tree is very beautiful, and in appearance, not unlike the orange. It is used in some parts of Europe for hedges and fence for gardens and vineyards. The quince should be planted from ten to twelve feet apart; it may be grafted under the bark in early spring, or budded in August or September. It seems first to have attracted notice in the city of Sidon, in Crete or Candia, hence its botanical name Cydonia. "Quince," says Columella, "not only yields pleasure but health."

Uses.—For confections the quince is a general favorite, being used for preserves, marmalades, sauces, syrups, jellies and for drying. It imparts a fine flavor to other fruits. Water in which quinces have been steeped for a few hours makes a good wine when properly treated with sugar.

The juice of the quince is a remedy for nausea. Quince stocks are used for grafting pears. The fruit is not eaten in the raw state except for medical purposes, and it has the reputation of being useful in that state for asthma and some other diseases. Dr. Phillips recommends the following quince wine for asthma and states cases of cures performed by it. Cut up the Quinces, extract the seeds and grind the flesh to a pomace, add one gallon of water to each gallon of pomace; after standing two days press out the fluid and, to every gallon of liquor thus prepared, add three and-a-half pounds of sugar. The liquor is to be placed in a cask which is to be stopped quite close until March, when it is racked, and may be bottled in the second year.

SOIL, CULTURE, TRAINING, PROPAGATION &c.

The quince has been too long the despised occupant of the neglected and obscure parts of the garden, and has been generally supposed to require a wet soil, but despite of old prejudices, it will flourish on a greater variety of soils than any other—from the moist muck swamp to the garden ridge. They require to be kept clean of grass and weeds, and thoroughly manured, being rank feeders. They may be propagated from seeds, layers or cuttings and also by grafting and budding where the same kinds are desired to be maintained. The seeds of the quince re-produce the same sorts with greater certainty than those of other fruits still varying some and hence the different shapes from pear to apple. They may be grown on trees or bushes. The finest fruit is produced from single standards with well formed heads. The only excuse for growing them in a bush form is to supply a second trunk, if the first should be destroyed by the borer.

To propagate by layers, lay down young shoots in the spring and cover with dirt so as to leave two or three buds above the ground. Roots will generally be formed in autumn, when the layer and new root may be separated from the parent tree, and set out in rows. Such as have not rooted may remain for the second year when they may be transplanted. Quince cuttings should be placed not less than ten to twelve inches deep, and leaving but a small portion above the ground, and mulching with dry leaves or brush to give shade. These willbe fit to remove for standards in two or three years. As a remedy for the borer in the quince tree, charcoal, blacksmith's cinders and unleached ashes, have each been tried in turn, and as far as we know, without effect. The only sure method is to extract the insect with a knife, and cover the wound with grafting wax. Thomas recommends as a remedy for the borer, grafting the quince on a pear stock. According to Goropinus, quinces were the golden apples of the Hesperides, and not oranges as some commentators pretend. Quinces are sometimes budded on the common thorn.

VARIETIES.—There are four kinds only used in cooking, the apple, the orange, the pear shapes and the Portugal. Of these the pear shaped is preferred for cooking. The flesh of the apple quince is rather more tender but not so high flavored. The apple quince is two or three weeks earlier than the pear, but will not keep so well.

ORNAMENTAL VARIETIES.—There are two or three ornamental varieties of the quince, natives of China and Japan, and now generally introduced as garden shrubs. The Japan quince is a thorny shrub with dark green leaf, clothed with clusters of blossoms in April, larger than those of the quince and of the brightest scarlet. The fruit which occasionally succeeds its flowers, is very hard, dark green color and of a peculiar and not unpleasant smell but entirely useless. The white or blushed Japan quince resembles the former except that the flowers are white, and the color being like those of the common apple tree.

CHINESE QUINCE.—Is a very pretty shrub, seldom produces fruit, leaves are dark with a shining surface, the flowers small and red, with a violet odor. This shrub is most beautiful in May, and less showy than the Japan quince. The leaves become beautifully red in autumn.

Mr. Low.—Had cultivated the gooseberry twenty years ago in England and here. He [had never suffered from mildew, I always kept mine well cultivated, forked up the ground well in dry weather, and litter them well, and give them my soap suds often; my grape vines love that too, I give it to them freely and they flourish. My gooseberries were often three inches and more in circumference.

The chairman remarked that slips from last year's growth of raspberries and currants will give some fruit the first year of their being set. I let the litter lie about my bushes all summer and then dig it up.

Mr. Fleet.—This litter of mulch retains the moisture in the soil, keeps down evaporation, and causes an equal or uniform condition as to warmth.

The Chairman.—Mildew is rarely seen in dry seasons.

Mr. Richard G. Pardee, of Palmyra, Wayne county, said that it was desirable to have a kind of gooseberry that never mildews. Houghton's Seedling is one of them. It requires no pruning and no mulching, yet produces enormously an oblong berry which is superior in flavor to all but Crompton's Queen Sheba. I cover the ground with hog manure.

Mr. Fleet.—We have a gooseberry up the Hudson river which never mildews; the berry is of rather an oblong shape.

Mr. Pardee presented glass jars of peaches and currants preserved after a peculiar method by Mrs. Wm. R. Smith, of Macedon, Morris Whites and another. Members on tasting them thought them good, having more of the natural color and flavor than other preserves.

On motion of the chairman, the thanks of the club were unanimously voted to Mr. Pardee.

On motion of Mr. George Dickey, the Whortleberry was adopted as a subject for next meeting, to which were added the beet, carrot and parsnip.

Seeds were distributed. Grafts from Mr. Pell, of Pelham, of a seedling apple in his orchard, which has the peculiarity of bearing its apples on the extreme ends of the branches.

Mr. Willson's Charter Oak grapes and vines were at the club. They can be obtained at 579 Grand street.

Subjects for next meeting: Wortleberry, beet, carrot and parsnip.

The club adjourned to Tuesday next at noon.

H. Meigs, *Secretary.*

PREMIUMS

AWARDED AT THE CATTLE SHOW OF THE AMERICAN INSTITUTE, OCTOBER, 1851.

NATIVE AND CROSSES BETWEEN IMPROVED AND NATIVE CATTLE.

Judges—Thompson C. Munn, Jacob D. Van Winkle, R. D. Baldwin.

Oliver Slate, Jr. Throg's Neck, N. Y., for the best bull. Silver cup or $20.

Bayard Clark, Throg's Neck, N. Y., for the second best bull, "Prince Albert." Silver medal or $10.

Jackson Nichols, Flushing, L. I., for the third best bull. Silver medal.

James Davidson, Craigsville, Orange county, N. Y., for the best bull calf. Silver medal.

Robert R. Morris, Westchester, N. Y., for the second best bull calf. Trans. Am. Ins.

Robert R. Morris, Westchester, N. Y., for the best cow, "Sally Marius." Silver cup or $15.

James Bathgate, Fordham, N. Y., for the second best cow. Silver cup or $10.

Bathgate & Brothers, Morrisania, N. Y., for the third best cow. Silver medal.

Thomas Richardson, Westchester county, N. Y., for the best 2 year old heifer. Silver cup or $10.

James Bathgate, Fordham, N. Y., for the second best heifer. Silver medal.

Edward G. Faile, West Farms, N. Y., for the best yearling heifer. Silver cup, or $8.

Oliver Slate, jr., Throg's Neck, N. Y., for the second best heifer. Trans. Am. Ins.

George M'Dowell, for the best heifer calf. Silver medal.

James Bathgate, Fordham, N. Y., for the second best heifer calf. Trans. Am. Ins.

FULL BRED STOCK.

Judges—Edward H. Smith, Gerard Crane, Anson Crane.

Oliver Slate, jr., Throg's Neck, N. Y., for the best bull, "Logan." Silver cup or $20.

Daniel B. Haight, Washington, N. Y., for the second best bull, "Prince Albert." Silver cup or $10.

John C. Jackson, Astoria, L. I., for the best yearling bull. Silver cup or $10.

Bathgate & Brothers, Morrisania, N. Y., for the second best yearling bull. Silver medal.

Lorillard Spencer, Williams' Bridge, for the best bull calf, "Duke of Cornwell." Silver medal.

James Beck, West Farms, Westchester county, N. Y., for the best cow, "Eliza." Silver cup or $15.

Morris Ketchum, New-Haven, Conn., for the second best cow. Silver cup or $10.

Bathgate & Brothers, Morrisania, N. Y., for the third best cow. Silver medal.

Lorillard Spencer, Williams' Bridge, N. Y., for the best 2 year old heifer, "Sonsie 8th." Silver cup or $10.

Oliver Slate, jr., Throg's Neck, N. Y., for the second best heifer, "Damask Rose." Silver medal.

James Beck, West Farms, N. Y., for the best yearling heifer, "Lady Fanny." Silver cup or $8.

Daniel B. Haight, Washington, N. Y., for the second best yearling heifer, "Red Rose." Trans. Am. Ins.

Devons.

Judges—Horace Bailey, John H. Nettleson, Wm. L. Cowles, Winthrop Wadsworth, Daniel H. Willard.

Lemuel Hurlbut, Winchester, Conn., for the best bull "Roscius." Silver cup or $20.

Edward G. Faile, West Farms, N. Y., for the second best bull, "Otsego." Silver cup or $10.

Jacob N. Blakeslee, Watertown, Conn., for the third best bull. Silver medal.

Edward G. Faile, West Farms, N. Y., for the best yearling bull, "Putnam." Silver cup or $10.

Ambrose Stevens, N. Y., for the best bull calf. Silver medal.

Ambrose Stevens, N. Y., for the second best bull calf. Trans. Am. Ins.

Lemuel Hurlbut, Winchester, Conn., for the best cow, "Beauty." Silver cup or $15.

Ambrose Stevens, New-York, for the second best cow. Silver cup or $10.

Jacob N. Blakeslee, Watertown, Conn., for the third best cow. Silver medal.

Ambrose Stevens, New-York, for the best two year old heifer. Silver cup or $10.

Jacob N. Blakeslee, Watertown Conn., for the second best 2 year old heifer. Silver medal.

Jacob N. Blakeslee, Watertown, Conn., for the best yearling heifer. Silver cup or $8.

Ambrose Stevens, New-York, for the best heifer calf. Silver Medal.

Jacob N. Blakeslee, Watertown, Conn., for the second best heifer calf. Trans. Am. Ins.

Jacob N. Blakeslee, Watertown, Conn., for the best lot high bred Devons, (20 head,) $40.

Ayrshires.

Judges.—John Rae, John Dick, A. Johnson.

J. C. Tiffany, Greene co., N. Y., for the best bull. Silver cup or $20.

E. P. Prentice, Mount Hope, Albany, N. Y., for the second best bull, "Jack the Laird." Silver cup or $10.

E. P. Prentice, Mount Hope, Albany, N. Y., for the best yearling bull. Silver cup or $10.

E. P. Prentice, Mount Hope, Albany N. Y., for the best cow. Silver cup or $15.

E. P. Prentice, Mount Hope, Albany, N. Y., for the second best cow, "Red Sally." Silver cup or $10.

E. P. Prentice, Mount Hope, Albany, N. Y., for the best 2 year old heifer. Silver cup or $10.

R. R. Morris, Westchester, N. Y., for the second best two year old heifer. Silver medal.

E. P. Prentice, Mount Hope, Albany, N. Y., for the best yearling heifer. Silver cup or $8.

J. C. Tiffany, Greene co., N. Y., for the best heifer calf. Silver medal.

ALDERNEYS.

Judges—John Rae, John Dick, A. Johnston.

R. L. Colt, Paterson, N. J., for the best bull. Silver cup or $20.

R. L. Colt, Paterson, N. J., for the best cow. Silver cup or $15.

MILKING COWS.

Judges—Henry Robinson, A. H. Hubbard, Seely C. Roe.

R. R. Morris, Westchester co., N. Y., for the best cow, "Lady Vair." Silver cup or $20.

James Bathgate, Fordham, N. Y., for the second best cow. Silver cup or $10.

George R. Winchel, Duchess co., N. Y., for the third best cow. Silver medal.

WORKING OXEN.

Judges—Hudson McFarland, D. K. Sherwood, Joseph H. Baldwin.

John T. Andrews, Sharon, Conn., for the best pair of working oxen. Silver cup or $20.

Timothy F. Tilson, Rosendale, N. Y., for the second best pair of working oxen. Silver cup or $10.

Jacob N. Blakeslee, Watertown, Conn., for the third best pair of working oxen. Silver medal.

Jacob N. Blakeslee, Watertown, Conn., for 8 pair of working oxen. $20.

FAT CATTLE.

Judges—James E. Bathgate, Thos. F. Devoe, Brian Lawrence, Lyman Seely.

R. R. Morris, Westchester co., N. Y., for the best fat calf. $5.

R. R. Morris, Westchester co., N. Y., for the second best fat calf. $3.

B. Ames, Craigsville, Orange co., N. Y., for a pair of fat cattle. Silver cup or $10.

FAT SHEEP.

Judges—Jas. E. Bathgate, Thomas F. Devoe, Brian Lawrence, Lyman Seely.

Elias L. Barlow, La Grange, Dutchess county, N. Y., for the best fat sheep. Silver cup or $8.

James Patten, Dutchess county, N. Y., for the second best fat sheep. Silver medal.

Edward Wait, Montgomery, Orange county, N. Y., for the third best fat sheep. Trans. Am. Ins.

Jas. M. Winchel, North East, Duchess county, N. Y., for a fat wether. Silver medal.

LONG WOOL SHEEP.

Judges—Leonard D. Clift, Ja's Van Vechten, Elnathan Haxtun.

Elias L. Barlow, La Grange, Dutchess county, New-York, for the best buck. Silver cup, or $8.

Elias L. Barlow, La Grange, Dutchess county, New-York, for the best pen of five ewes. Silver cup, or $8.

Isaac H. Hallock, Ulster county, New-York, for the best pen of five lambs. Silver medal.

MIDDLE WOOL SHEEP.

Judges—Leonard D. Clift, Ja's Van Vechten, Elnathan Haxtun.

Daniel B. Haight, Washington, Dutchess county, New-York, for the best buck. Silver cup, or $8.

Daniel B. Haight, Washington, Dutchess county, N. N., for the second best cup. Silver medal.

Daniel B. Haight, Washington, Dutchess county, N. Y., for the best pen of five ewes. Silver cup, or $8.

Ambrose Stevens, New-York, for the second best pen of five ewes. Silver medal.

Edward Wait, Montgomery, Orange county, New-York, for a pen of three ewes Silver medal.

Daniel B. Haight, Washington, Dutchess county, New-York, for the best pen of five lambs. Silver medal.

MERINOS.

Judges—Obadiah Elliott, John Harold, Charles W. Hull.

A. L. Bingham, Middlebury, Vermont, for the best buck. Silver cup, or $8.

Isaac N. Deforest, Dover, N. Y., for the second best buck, "Louis Philippe." Silver medal.

SAXONS.

Judges—Obadiah Elliott, John Harold, Charles W. Hull.

C. B. Smith, Wolcottville, Connecticut, for the best buck. Silver cup, or $8.

Walter Wakeman, North East, Dutchess county, New-York, for the second best buck. Silver medal.

Walter Wakeman, North East, Dutchess county, New-York, for the best pen of five ewes. Silver cup, or $8.

C. B. Smith, Wolcottville, Connecticut, for a pen of three ewes. Silver medal.

Walter Wakeman, North East, Dutchess county, New-York, for the second best pen of five ewes. Silver medal.

Walter Wakeman, North East, Dutchess county, New-York, for the best pen of five lambs. Silver medal.

SHEPHERD DOGS.

Judges—Obadiah Elliot, John Harold, Charles W. Hull.

George W. Allerton, Bull's Head, New-York, for the best shepherd's dog. Transactions American Institute.

Bathgate Brothers, Morrisania, New-York, for a shepherd's dog. Transactions American Institute.

SWINE.

Judges—Samuel G. Striker, Asa Munn, Peter H. Brink.

Samuel Love, 53d street, N. Y., for the best boar over 2 years old. Silver cup or $8.

William W. Smith, for the second best boar. Silver medal.

Samuel Brewer, 132d street and 8th avenue, N. Y., for the best boar, one year old. Silver cup or $8.

Samuel Love, 53d street, N. Y., for the second best boar 1 year old. Silver medal.

Samuel Love, 53d street, N. Y., for the best sow over 2 years old. Silver cup or $8.

Samuel Brewer, 132d street and 8th avenue, for the best sow 1 year old. Silver cup or $8.

J. D. Oakley, Newtown, L. I., for the second best sow 1 year old. Silver medal.

Samuel Love, 53d street, N. Y., for the best lot of pigs. Silver cup or $8.

Edward Wait, Montgomery, Orange county, N. Y., for a lot of pigs. Silver medal.

HORSES FOR ALL WORK.

Judges—R. R. Morris, A. Hatfield, A. B. Raymond.

John M'Chesney, New-York, for the best stallion, "Tom Thumb." Silver cup, or $20.

Alexander Campbell, East Twenty-fourth street, for the second best stallion. "Young Andrew Jackson." Silver cup or $15.

Robert H. Reading, Flemington, N. J., for the third best stallion, "Comet." Silver cup or $10.

John McChesney, New-York, for a stallion, "Cassius M. Clay." Diploma.

Chas. T. Howell, Long Island, for a Norman horse, "Young Norma." Diploma.

J. P. Currie, New-York, for a stallion, "Black Hawk." Diploma.

Wm. Laimbeer, New-York, for a stallion. Diploma.

Charles Barker, West Farms, N. Y., for the best brood mare and colt. Silver cup or $12.

James R. Potter, Middlesex county, N. J., for the best colt, "Sabek." Silver cup or $10.

Thomas Williams, jr., New-York, for the second best colt, 3 years old. Silver medal.

John McChesney, New-York, for the best colt, 2 years old. Silver cup or $8.

Jackson Nichols, Flushing, L. I., for the second best colt, 2 years old. Silver medal.

Wm. M. Rosenbeck, Chester, Orange county, N. Y., for a colt. Diploma.

Chas. E. Sears, Fort Hamilton, for a colt. Diploma.

Levi North, New-York, for a gelding, "Tammany." Diploma.

Randolph Merritt, New-York, for a gelding. Diploma.

Peter Dubois, Catskill, New-York, for a gelding. Diploma.

MATCHED HORSES.

Judges—William Stammers, William T. Porter, Thomas Williams, Jr.

Bayard Clark, Throgs Neck, New-York, for the best pair of matched horses. Silver cup, or $10.

Charles McKnight, 76 Eleventh-street, for the second best pair of matched horses. Silver medal.

Daniel Abbott, Brooklyn, L. I., for the best pair farm horses. Silver cup, or $10.

Bathgate Brothers, Morrisania, New-York, for the second best pair farm horses. Silver medal.

Henry S. Lyon, for a pair of mares. Diploma.

MULES AND JACKS.

Judges—P. M. Ryerson, Peter Townsend,

William S. Sears, Fort Hamilton, L. I., for the best pair of working mules. Silver cup, or $10.

Stephen B. Caruana, New-York, for the best jack. Silver cup, or $10.

John A. Poole, New Brunswick, New-Jersey, for the second best jack. Silver medal.

EXTRA STOCK.

William Thompson, corner 25th-street and 5th Avenue, for a Chinese cow. Diploma.

Bayard Clark, Throgs Neck, New-York, for a pair of Shetland ponies. Diploma.

POULTRY.

Judges—John Dick, H. C. Barretto, William L. Laing.

Roswell L. Colt, Paterson, New Jersey, for the greatest and best variety of poultry. Silver cup, or $8.

Roswell L. Colt, Paterson, New Jersey, for the best pair of turkeys. American Poulterer's Companion.

Roswell L. Colt, Paterson, New Jersey, for the best pair of Bremen geese. American Poulterer's Companion.

Roswell L. Colt, Paterson, New Jersey, for the best pair of tame geese. American Poulterer's Companion.

Gilbert A. Wilkins, Throgs Neck, New-York, for the best pair of Muscovy ducks. American Poultry Yard.

Gilbert A. Wilkins, Throgs Neck, New-York, for the best pair of common ducks. American Poultry Yard.

Russell L. Colt, Paterson, New-Jersey, for the best pair of Dorking fowls. American Poultry Yard.

Russell L. Colt, Paterson, New-Jersey, for the best pair capons. American Poultry Yard.

George E. Dickson, 23d-street, for the best pair Poland fowls. American Poultry Book.

Gilbert A. Wilkins, Westchester, county, N. Y., for the best collection farm fowls. American Poultry Yard and Companion.

PREMIUMS

AWARDED BY THE MANAGERS OF THE TWENTY-FOURTH ANNUAL FAIR OF THE AMERICAN INSTITUTE, OCTOBER, 1851.

AGRICULTURAL AND HORTICULTURAL DEPARTMENT.

FARMS.

Judges—David Banks, James De Peyster, Alanson Nash.

Elijah H. Kimball, Flatlands, L. I., for the best cultivated farm of 100 acres. Silver cup or $20.

James Bathgate, Fordham, N. Y., for the second best farm. Silver cup or $15.

WOOL.

Robert Hoag, Dutchess co., Harvey Hoag, agent, 73 Pine street, for a superior specimen of American fleece wool. Silver cup or $8.

Charles B. Smith, Wolcottville, Conn., for superior specimens of fine American fleece wool. Silver cup or $8.

AGRICULTURAL PRODUCTIONS.

Judges—Thomas Bell, Ralph Hall, Nicholas Wyckoff.

Jacob P. Giraud, jr , Bergen, N. J., for the best varieties of Indian corn. Silver cup or $8.

Roswell L. Colt, Paterson, N. J., for a choice display of Indian corn. Colman's European Agriculture.

Ephraim Baker; Union N. J., for the best 40 ears of white corn. Farmer's Encyclopedia.

Jacob P. Giraud, jr., Bergen N. J., for the best 40 ears of yellow corn. Colman's European Agriculture.

Jacob P. Giraud, jr., Bergen, N. J., for the best 40 ears of brown corn. Allen's American Farm Book.

Oliver J. Tillson, Rosendale, N. Y., for the best bushel of wheat. Silver cup or $8.

A. W. Harvey, Harrington, N. J., for one bushel superior Mediterranean wheat. Farmers' Encyclopedia.

Oliver J. Tillson, Rosendale, N. Y., for the best bushel of rye. Silver medal.

Edward Harris, Matteawan Point, N. J., for a bushel ot superior rye. Browne's Trees of America.

George Nesbitt, Hobart, Delaware co., N. Y., Alexander Smith, agent, 388 Broadway, N. Y., for the best bushel of oats. Silver medal.

Samuel T. Jones, New Brighton, Staten Island, for a bushel of superior oats. Stephen's Book of the Farm.

Emma R. Purse, Newark, N. J., for the best bushel of barley. Browne's Trees of America.

FLOUR AND MEAL.

Judges—Edward Cromwell, Stephen Valentine, Anselm B. Haner.

Hecker & Brothers, 101 Cherry street, N. Y., for the best barrel of flour. Silver cup or $8.

J. Lathrop, Le Roy, N. Y., Clark & Coleman, agents, 7 Water street, for a barrel of extra superfine flour. Silver medal.

Howell & Grunendyke, Le Roy, N. Y., Dowes & Co., agents, 20 Water street, for a barrel of extra superfine flour. Colman's European Agriculture.

T. F. Tillson & Sons, Rosendale, N. Y., for the best barrel of rye flour. Silver medal.

Hecker & Brothers, Cherry street, for the second best barrel of rye flour. Farmers' Dictionary.

Geo. W. Runk, North Branch, N. J., Randolphs & Tucker, agents, 53 Whitehall street, for the best sample of meal. Silver cup or $8.

Hecker & Brothers, 201 Cherry street, for the second best sample of meal. Stephen's Book of the Farm.

Hecker & Brothers, 201 Cherry street, for superior preparations of corn and wheat. Silver medal.

Quinby & Co., 177 Spring street, for prepared flour and meal.

Rufus D. Platt, N. Y., for extra superfine buckwheat flour. Diploma.

WINES.

Judges—Wm. Niblo, Christopher Heiser, Philip French.

N. Longworth, Cincinnati, Ohio, for sparkling Catawba, a gold medal having been before awarded. Diploma.

Isaac Merrell, for a good imitation of Rhenish wine, and from the Muscadine. Diploma.

Wm. H. Hughes, Matteawan Point, N. J., for a delicate wine resembling Malaga. Diploma.

Wm. H. Siminton, Brooklyn, for a good imitation of Mozelle wine. Diploma.

John Harold, Hempstead, L. I., for Elderberry wine. Diploma.

PRODUCTS OF THE DAIRY—BUTTER.

Judges—Aaron Carpenter, Lawrence M. Luther, Peter B. Mead.

Charles Powell, Blooming Grove, N. Y., for the best sample of butter. Silver cup or $8.

John W. Conklin, Yorktown, N. Y., Edward Deming, agent, 67 Third avenue, for a sample of fine flavored butter. Silver medal.

Valentine H. Hallock, North East Centre, N. Y., for a sample of good butter. Allen's Farm Book.

CHEESE.

Judges—Jesse K. Weeks, Wm. S. Badeau, Charles M. Carpenter.

Isaac Carpenter, 14 Front street, for the best specimen of cheese. Silver cup or $8.

B. Pardee, 14 Front street, for a fine American dairy cheese. Silver medal.

Jessie Williams, Rome, N. Y., Beaty & Mitchell, agents, 184 Greenwich street, for a good American dairy cheese. Colman's European Argiculture.

J. Pryor Rorke, 14 Front street, for a fair American dairy cheese. Farmer's Encyclopedia.

Wallace, Wicks & Co., 11 Front street, for the best imitation English dairy cheese. Colman's European Agriculture.

Isaac Dinsmore, Windsor, Ohio, Wallace Wicks & Co., agents, 11 Front street, for superior imitation English dairy cheese. Trans. State Agricultural Society.

C. C. Wick, Ashtabula Co., Ohio, Condit, Noble & Co., agents, 15 Water street, for excellent imitation English dairy cheese. Trans. American Institute.

Hays and Plumb, Ashtabula, Ohio, Condit, Noble & Co., agents, 15 Water street, for the best pine apple cheese. Colman's European Agriculture.

S. Garrabrant, 14 Front street, for superior pine apple cheese. Transactions American Institute.

Samuel Miller, Lewis Co., N. Y., for Sapsago cheese. Diploma.

FRUITS.

Judges—Thos. Hogg, Jr., Wm. Reid, A. P. Cumings, John Brill, B. Ferris.

McIntosh & Co., Cleveland, Ohio, for the choicest and greatest variety of fruits. Silver cup or $15.

John W. Bailey, Plattsburgh, N. Y., for the greatest number of choice varieties of apples. Silver cup or $8.

Caleb H. Earle, Newark, N. J., for a fine display of choice varieties of apples. Silver medal.

Charles H. Williams, Orange, N. J., for a good display of choice varieties of apples. 4 Nos. Hovey's Fruits.

Hovey & Co., Boston, Mass., for the greatest number of choice varieties of pears. Silver cup or $8.

Joseph Pierson, Newark, N. J., for a fine display of choice varieties of pears. Silver medal.

Isaac M. Ward, Newark, N. J., for a display of choice varieties of pears. 4 Nos. Hovey's Fruits.

John Law, Bloomingdale and Sixty-third street, N. Y., for the best table pears. Barry's Treatise on Fruit.

Frederick Law Olmstead, south side Staten Island, for superior table pears. Thomas's Fruit Culturist.

Lewis C. Lighthipe, Orange, N. J., for the best winter pears. Silver cup or $8.

Samuel C. Jackson, Astoria, L. I., for superior winter pears. Silver medal.

Isaac M. Ward, Newark, N. J., for the best freestone peaches. Barry's Treatise on Fruits.

Samuel T. Jones, New Brighton, Staten Island, for superior freestone peaches. Thomas's Fruit Culturist.

Samuel T. Jones, New Brighton, Staten Island, for the best clingstone peaches. Barry's Treatise on Fruits.

William H. Hughes, Matteawan Point, N. J., for the best Isabella grapes. Silver medal.

Wm. A. Underhill, Croton Point, N. Y., for extra fine flavored Isabella grapes. Silver medal.

Thomas R. Porter, Matteawan Point, N. J , for fine Isabella grapes. Allen on the vine.

William H. Hughes, Matteawan Point, N. J., for the best Catawba grapes. Silver medal.

Wm. A. Underhill, Croton Point, N. Y., for highly flavored Catawba grapes. 4 Nos. Hovey's Fruits.

R. T. Underhill, Croton Point, N. Y., for extra grapes. Barry's Treatise on Fruit.

R. T. Underhill, Croton Point, N. Y., for the best display of native grapes. Silver medal.

Joseph M. Ward, Newark, N. J., for a fine display of native grapes. Downing's Fruits.

Roswell L. Colt, Paterson, N. J., for the best display of foreign grapes. Silver Medal.

Cadwallader Owens, for superior foreign grapes. 4 Nos. Hovey's Works.

James Brown, Clifton, Weehawken, N. J., for fine foreign grapes. Allen on the Vine.

William Wright, Newark, N. J., for fine foreign grapes. Hoare on the Vine.

John J. Walker, Schenectady, N. Y., for the best plums. Downing's Fruits.

R. T. Underhill, Croton Point, N. Y., for the best quinces. Silver medal.

J. Eaton, U. S. A., Fort Hamilton, L. I., for a fine display of quinces. Barry's Treatise on Fruit.

D. K. Delafield, Staten Island, C. Byrne, gardener, for a good show of quinces. Thomas's Fruit Culturist.

Joseph M. Ward, Newark, N. J., for a seedling grape of much excellence. Downing's Fruits.

J. Cozzens, Dobbs's Ferry, N. J., for several fine samples of foreign grapes, grown without protection. Diploma.

James Hanley, Jamaica, L. I., for several varieties of choice apples. Trans. State Agricultural Society.

P. S. Wetmore, Brooklyn, L. I., for a sample of splendid Virgalieu pears. Barry's Treatise on Fruits.

John Tonnelé, Bergen, N. J., for a fine show of Seckel pears. Trans. American Institute.

Jonn Tonnellè, Bergen, N. J., for a sample of excellent Madeira nuts grown in New Jersey. Trans. State Agricultural Society.

Nathan Barrett, Factoryville, Staten Island, for a fine show of pears. Trans. American Institute.

Special Premiums.

Wm. R. Austin, Dorchester, Mass., for a show of splendid Duchesse d'Angouleme Pears. Barry's Fruits.

John Tonellé, Bergen, N. J., for well ripened Maderia nuts grown in N. Y. city. Trans. N. Y. State Ag. Society.

Eliza Peck, Southington, Conn., for a large show of superior quinces. Trans. American Institute.

Jeremiah Bridge, Jamacia, L. I., for a fine display of pears. Trans. American Institute.

Parsons & Co., Flushing, L. I., for two varieties of superior hothouse grapes. Trans. American Institute.

M. Cook, Utica, N. Y., Edward J. O'Conner, agent, 77 Wall street, for very fine Bergamotte, Seckel, and White Doyenné pears. Diploma.

Samuel Smith, Brooklyn, L. I., for extra fine peaches. Trans. American Institute.

William Wilson, West Milton, N. Y., for specimens ot good seedling apples, one year old. Trans. American Institute.

Edward J. Genet, Greenbush, N. Y., for a fine display of agricultural and horticultural products. Barry's Fruits.

Lester W. Cox, Bergen, N. J., for extra fine Seek-no-further apples. Trans. American Institute.

FLOWER GARDENS.

Judges—Peter B. Mead, Jas. De Peyster, Henry Meigs.

William Cranstoun, gardener to E. A. Stevens, Castle Point, Hoboken, N. J., for the best cultivated and most tastefully arranged flower garden. Silver cup or $10.

Stephen Knowlton, Clinton avenue, Brooklyn, L. I., for a well cultivated garden of choice plants. Silver medal.

SPECIAL EXHIBITION—DAHLIAS.

Judges—Robert Carnley, Alfred Bridgeman, Archibald Henderson.

Mateo Donadi, Forty-fourth street, Bloomingdale, for the best twenty-four named dahlias. Silver medal.

Thomas Dunlap, 535 Broadway, for twenty-four superior varieties of named dahlias. Boudoir Botany.

W. Beekman, Fifty-fifth street, for twenty-four bloomed named dahlias. Parson's Rose Manual.

Mateo Donadi, Forty-fourth-street, for the best American seedling dahlias. Silver medal.

John E. Rauch, Brooklyn, for fine American seedling dahlias. Silver medal.

G. H. Stryker, Strykers Bay, New-York, for twenty-four fine blooms of named dahlias. Transactions American Institute.

ROSES.

Judges—N. S. Becar, George C. Thorburn, Archibald Henderson.

Charles Moré, Ninety-eighth-street, Third avenue, for the best named roses. Silver medal.

Mateo Donadi, Forty-fourth-street, Bloomingdale, for twenty varieties of superb roses. Boudoir Botany.

David Clarke, Bloomingdale, New-York, for twenty varieties of superb roses. Downing's Landscape Gardening.

Cadwallader Owens, Carolina Hall, Flushing, L. I., for the best six seedling roses. Silver medal.

BOUQUETS.

Judges—N. J. Becar, George C. Thorburn, Archibald Henderson.

Walter Park, 805 Broadway, for the best pair of hand bouquets. Silver medal.

J. T. Malone, Jersey City, New-Jersey, for a splendid pair hand bouquets. Boudoir Botany.

John E. Rauch, Brooklyn, Long-Island, for a pair of large hand bouquets. Transactions State Agricultural Society.

Alfred Bridgeman, Broadway, Eighteenth-street, for a beautiful pair of hand bouquets. Parson's Rose Manual.

Edward Schickler, Broadway, Fiftieth-street, for a pair of pretty table bouquets. Transactions American Institute.

John Cranstoun, Hoboken, New-Jersey, for a pair of small but very neat bouquets. Bridgeman's Florist's Guide.

FLOWERS.

Judges—Peter B. Mead, Francis J. Smith, William S. Carpenter.

William Beekman, Fifty-fifth-street and Sixth avenue, for the largest and best display of dahlias. Silver cup, or $15.

Mateo Donadi, Forty-fourth-street, Bloomingdale, for a large and splendid display of dahlias. Silver cup, or $10.

John E. Rauch, Gowanus, Long-Island, for a beautiful display of dahlias. Silver cup, or $8.

H. A. Graef, Brooklyn, for a beautiful display of dahlias. Silver medal.

Charles Moré, Ninety-eighth-street, Third avenue, for a display of fine dahlias. Boudoir Botany.

A. P. Cumings, Williamsburgh, Long-Island, for a fine display of dahlias. Downing's Horticulturist.

William Wright, Newark, New-Jersey, for a good display of dahlias. Hovey's Magazine of Horticulture.

D. Boll, Broadway, and Fiftieth-street, for a display of fine dahlias. Leuchar on Hothouses.

John Cranstoun, Hoboken Point, New-Jersey, for the best display of bouquets. Silver cup, or $8.

Mrs. A. A. Smith, Brooklyn, Long-Island, for a beautiful display of bouquets. Downing's Horticulturist.

Richard W. D. Riddoch, Stuyvesant-street, for a pretty display of bouquets. Downing's Horticulturist.

J. & P. Henderson, Harsimus, New-Jersey, for several beautiful bouquets. Hovey's Magazine of Horticulture.

Andrew Reid, Broadway, for very pretty bouquets. Parson's Rose Manual.

George Brown, 9 John-street, for a very pretty bouquet. Mrs. Loudon's Flower Garden.

John Cranstoun, Hoboken Point, New-Jersey, for the best and most beautifully arranged flower basket. Silver cup, or $8.

Alfred Bridgeman, corner Broadway and Eighteenth-street, for a beautifully formed flower basket. Boudoir Botany.

William Cranstoun, Hoboken Point, New-Jersey, for the best floral design. Silver cup, or $10.

Mrs. C. C. Hemingway, Williamsburgh, Long-Island, for two beautifully formed bouquets of natural grasses. Parson's Rose Manual.

George Haufe, 659 Broadway, for a beautiful pyramid of dahlias. Leuchar on Hothouses.

Henry Bridgeman, New-York, for a good show of dahlias. Parsons' Rose Manual.

Charles Moré, Ninety-eighth-street and Third avenue, for the largest and best display of roses and cut flowers. Silver cup, or $8.

Mateo Donadi, Forty-fourth-street, corner Bloomingdale Road, for a large and splendid display of roses and cut flowers. Silver medal.

B. Boll, Broadway and Fiftieth-street, for a beautiful display of roses and cut flowers. Parsons' Rose Manual.

VEGETABLES.

Judges—William M. White, Francis Briell, Isaac Buchanan.

Jacob P. Giraud, Jr. Bergen, New-Jersey, for the choicest assortment of culinary vegetables. Silver cup, or $8.

H. C. Murphy, Yellow Hook, Long-Island, Patrick Condon, gardener, for a fine display of culinary vegetables. Silver medal.

Roswell L. Colt, Paterson, New-Jersey, for the best and greatest variety of vegetable roots for cattle. Silver cup, or $8.

J. P. Giraud, jr., Bergen, N. J., for a choice display of cattle roots Silver medal.

R. K. Delafield, Staten Island, Christopher Byrne, gardner, for the best long blood beets. Bridgeman's Gardener's Assistant.

William Timpson, Bergen, N. J., for the best turnip rooted beets. American Agriculturist.

H. C. Murphy, Yellow Hook, L. I., Patrick Condon, gardener, for the best sugar beets. Brown's Muck Book.

Archibald Henderson, Middle-village, L. I., for the best mangold wurzel beets. American Agriculturist.

Jacob P. Giraud, jr., Bergen, N. J., for the best cape broccoli. Bridgeman's Gardener's Assistant.

Charles Winn, West Cambridge, Mass., Corson & Shields, agents, Washington Market, for the best cauliflower. American Agriculturist.

Archibald Henderson, Middle-village, L. I., for the best drum head cabbage. Buel's Farmer's Companion.

William H. Hughes, Matteawan Point, for the best Dutch cabbage. Brown's Muck Book.

R. K. Delafield, Staten Island, Christopher Byrne, gardener for the best table carrots. N. Y. Farmer and Mechanic.

Roswell L. Colt, Paterson, N. J., for the best table parsnips. Transactions American Institute.

R. K. Delafield, Staten Island, Christopher Byrne, gardener, for the best cattle parsnips. Transactions State Agricultural Society.

Roswell L. Colt, Paterson, N. J., for the best white solid celery. Farmer's Library.

R. K. Delafield, Staten Island, for the best egg plants. Browne's Muck Book.

Roswell L. Colt, Paterson, N. J., for the best white onions. Bridgeman's Gardener's Assistant.

Emma R. Purse, Newark, N. J., for the best yellow onions. Farmer's Dictionary.

Benjamin Vail, Chester, N. Y., for the best red onions. Allen's Farm Book.

John Brill, Newark, N. J., for the best seedling potatoes. Stephen's Book of the Farm.

Garret D. Van Raypen, Bergen, N. J., for the best potatoes for the table. Farmer's Dictionary.

William Baker, Union, N. J., for excellent potatoes for the table. Bridgeman's Gardener's Assistant.

Conrad Beam, Pompton Plains, N. J., for the best cattle potatoes. Farmer's Dictionary.

E. H. Kimball, Flatlands, L. I., for excellent cattle potatoes. Buel's Farmer's Companion.

Wm. H. Hughes, Matteawan Point, N. J., for the three best cheese pumpkins. Farmer's Dictionary.

Jacob P. Giraud, jr., Bergen, N. J., for the three best cattle pumpkins. American Agriculturist.

Samuel Arthur & Brothers, Mammakeating, New-York, for the best and largest pumpkins. Blake's Farmers' Everyday Book.

R. K. Delafield, Staten Island, Christopher Byrne, gardener, for the best vegetable marrow squashes. Blake's Farmers' Everyday Book.

H. C. Murphy, Yellow Hook, Long Island, Patrick Condon, gardener, for the best crook-necked squashes. American Agriculturist.

Nathan Barrett, Factoryville, Staten Island, for the best and largest squash. Blake's Agriculture.

William Timpson, Bergen, New-Jersey, for the best tomatoes. Farmers' Dictionary.

Jacob P. Giraud, jr., Bergen, New-Jersey, for superior tomatoes. Buist's Kitchen Gardener.

R. K. Delafield, Staten Island, Christopher Byrne, gardener, for the best salsify. Buist's Kitchen Gardener.

Samuel T. Jones, New Brighton, S. I., for the best Ruta Baga turnips. Farmers' Dictionary.

R. K. Delafield, Staten Island, Christopher Byrne, gardener, for superior cattle beets. Transactions American Institute.

Thomas J. Smith, Goshen, New-York, for a fine show of winter squashes. Transactions American Institute.

Samuel T. Jones, New-Brighton, S. I., for extra fine Carter potatoes. Transactions New-York State Agricultural Society.

William Timpson, Bergen, New-Jersey, for fine pumpkins and squashes. Transactions American Institute.

Joseph Porta Lussi, Brooklyn, for extra large and superior white radishes. Transactions American Institute.

J. A. Perry, Owls Head, New Utrecht, Long Island, for superior citron melons. Transactions American Institute.

Special Premiums.

John Combs, 3 Washington Market, for extra fine Delaware sweet potatoes. Transactions American Institute.

Mrs. Bulow, Locust Grove, New-Jersey, for a new variety of large table pumpkins of much excellence. Transactions American Institute.

Phillip Rikest, Seventieth-street, Bloomingdale, New-York, for extra fine white solid celery. Transactions American Institute.

Simon Denyse, New Utrecht, Long Island, for extra fine crook-necked squashes. Transactions American Institute.

Mrs. George S. Fox, West Farms, Westchester county, N. Y., for three varieties of curious and very pretty beets. Transactions American Institute.

Benjamin G. Forbes, 188 Laurens-street, for a fine show Smyrna squashes. Transactions American Institute.

MISCELLANEOUS ARTICLES.

Judges—Peter B. Mead, William S. Carpenter, Caleb F. Lindsley.

Remington & Co., 193 Chrystie-street, for the choicest and largest assortment of preserves. Silver medal.

Isaac Retchow, 144 Liberty street, for a fine assortment of preserves. Webster's Encyclopedia.

Edwards & Platt, Brooklyn, L. I., for the best honey in the comb. Miner's Bee Manual.

Remington & Co., 193 Chrystie street, for the best assortment of pickles. Mrs. Beecher's Recipe Book.

Richard Hawkins, Somerset county, N. J., for fine French burr pickles. Mrs. Beecher's Recipe Book.

Wm. B. Buchanan, Morton & Latrobe, agents, Baltimore, Md., for a superior Wheeling ham, cured on the Westphalia plan. Diploma.

A. W. Daby, 61 Elizabeth street, for a sample of superior mustard. Diploma.

E. J. Tryon, agent, 9 John street, N. Y., for the best garden syringe. Diploma.

Wm. S. McIlvaine, Brooklyn, L. I., for a canary of superior song. Diploma.

Townend Glover, Fishkill Landing, N. Y., for inimitable specimens of model fruits. Silver cup, $15.

Jordan L. Mott, 264 Water street, for cast iron vases for garden ornaments. Silver medal having been before awarded. Diploma.

Jules Lachaume, Hastings, N. Y., for garden decorations. Silver medal.

AGRICULTURAL IMPLEMENTS.

Judges—Nicholas Wyckoff, Thomas Bell, L. C. Pettis.

Emery & Co., Albany, N. Y., for the largest and a very superior collection of agricultural implements. Gold medal.

Paris Furnace Company, David J. Millard, Clayville, Oneida county, New-York, for scythes and forks of superior material and workmanship. Gold medal.

Draper & Clark, Berea, Ohio, Henry Westervelt, agent, 195 Front-street, for scythe-snaths with improved fastenings. Silver medal.

H. R. Ball, Stapleton, Staten Island, for the best draining tile. Silver medal.

John Jones, 197 Water-street, for an improved fruit gatherer. Diploma.

J. R. Knapp, 168 Reade-street, for a straw cutter. Diploma.

Eddy & Co., Union Village, Washington county, N. Y., for an improved threshing machine. Gold medal.

Eddy & Co., Union Village, Washington county, N. Y., for a twenty feet horizontal horse power. Gold medal.

Eddy & Co., Union Village, Washington county, N. Y., for an improved side hill plow. Silver medal.

Samuel Wilkinson, Middletown, Orange county, N. Y., for the best loop buck-eye grain cradles. Silver medal.

Chapman Warner, Kentucky, for a churn. Diploma.

G. F. Jerome, Hempstead Branch, Long Island, for the best fanning mill. Silver medal.

John R. Wilson, Bellvale, Orange county, N. Y., for straw, hay and corn-stalk cutter. Diploma.

Joseph B. Tillinghast, Graham Station, Ohio, for a superior patent churn. Silver medal.

M. Soverel, Orange, New Jersey, for improved hanging for a gate. Silver medal.

N. Chapin, Syracuse, N. Y., for a portable cider mill. Silver medal.

G. F. Jerome, Hempstead Branch, Long Island, for a good horse-power. Silver medal.

R. Daniels, Woodstock, Vermont, for the best hay and straw cutter. Silver medal.

John B. Wickerham, 241 Broadway, for a good wire fence fastening. Silver medal.

Gillet & Allis, Windsor, Connecticut, for an excellent cheese press. Silver medal.

Richard J. Gatling, Indianapolis, Indiana, for a very superior wheat drill. Gold medal.

Edwards & Platt, Brooklyn, Long Island, for a superior apiary. Silver medal.

N. Potter, Buffalo, N. Y., for an improved bee hive, to prevent the attacks of moths. Silver medal.

J. C. Bertholf, Sugar Loaf, Orange county, N. Y., for a straw and corn-stalk cutter. Silver medal.

TESTING OF PLOUGHS.

Judges—Ralph Hall, Thomas Bell, Nicholas Wyckoff.

B. Myer, Newark, New-Jersey, for the best plough, combining the greatest number of requisites to plough a furrow sixteen inches wide and eight inches deep. Silver cup, or $8.

John Moore, 191 Front-street, for the second best do. Silver medal.

John Moore, 191 Front-street, for the best plough, combining the greatest number of requisites to plough a furrow twelve inches wide and six inches deep. Silver cup, or $8.

John Moore, 191 Front-street, for the second best do. Silver medal.

Minor Horton & Co., Peekskill, N. Y., for their clipper plough, adapted for clay soil and deep ploughing. Diploma.

Eddy & Co., Union Village, Washington county, N. Y., for an iron plough. Diploma.

PLOWING MATCH.

Judges—Barnet Johnson, Peter Wyckoff, Jordan L. Mott, Geo. M. Hubbard, John B. Gedney, Edwin Keeler, Henry Keeler.

Joseph Swannell, Red Bank, Monmouth county, New-Jersey, for the best ploughing. Silver cup, or $8.

W. D. Odell, Westchester county, N. Y., for the second best ploughing. Silver medal.

William Henry Fish, Westchester county, N. Y., for the third best ploughing. Diploma.

MANUFACTURING AND MECHANICAL DEPARTMENT.

AGRICULTURAL AND MECHANICAL DRAWING.

Judges—Jas. Gray, Wm. Hurry, jr., John W. Ritch.

W. H. Low, Albany, N. Y., for the best mechanical drawing. Diploma.

John H. Capel, Brooklyn, L. I., for the second best mechanical drawing. Diploma.

ALGÆ.

Judges—Charles F. Durant, J. D. B. Stillman.

Mrs. A. D. Frye, 33 Pike street, for the best specimens of algæ. Gold medal.

John Hooper, Brooklyn, L. I., for the second best specimens of algæ. Silver medal.

BATHS.

Judges—D. Meredith Reese, Edward Gray, Isaac Green.

James A. Kissam, 93 Fulton st., for the best heater and bath. Diploma.

C. C. C. Dennison, for amarble wash basin and dips. Diploma.

Minor's work.

John W. Locke, 47 Ann st., for a shower bath. $3 and a certificate.

BELLS.

Judges—James P. Allaire, Thomas Hall, Edward Hodges.

Andrew Meneely, West Troy, N. Y., for superior bells. A gold medal having been before awarded. Diploma.

BOATS AND OARS.

Judges—Eugene Farr, R. Fish, Wm. De La Montagnie, jr.

J. L. Tobey, 300 West st., for the best boat, "Sea Drift." Silver medal.

George W. James, Brooklyn, for the second best boat, "E. F. Valentine." Diploma.

Ezekiel Page, 20 West st., for the best oars and sweeps. Silver medal.

BOOK BINDING.

Judges—Thomas S. Smith, Charles Harvey, P. Hogan.

Francis & Loutrel, 77 Maiden Lane, for the best blank books. Diploma.

Bowne & Co., 150 Pearl st., for the second best blank books. Diploma.

Henry Fairclough, 194 Fulton st., for a beautiful specimen of book binding. Silver medal.

LADIES' BOOTS AND SHOES.

Judges—E. J. Smith, C. Middleton, A. S. Rogers.

Benjamin Shaw, 73 Canal st., for the best gaiter boots and satin slippers. Silver medal.

W. L. Whiting, 435 Broadway, for the best black gaiter boots with welt and spring heel. Silver medal.

BRITANNIA AND PLATED WARE.

Judges—Luceus Hart, Wm. F. Sumner, Stephen Curtis, jr.

Reed & Barton, Taunton, Mass., J. & C. Berrian, agents, 601 Broadway, for best specimens of plated Britannia ware. Silver medal.

Filley & Mead, Philadelphia, Pa., T. T. Wilmerding, agent, 193 Pearl st., for nickel silver ware. A Silver medal having been before awarded. Diploma.

Camp & Co., Clark and Wilson, agents, 13 Cliff st., for German silver plated spoons. Diploma.

Ames Manufacturing Co., Chicopee, Mass., J. N. Olcott, agent, 15 Maiden Lane, for beautiful specimens of plated cake baskets and castors. Silver medal.

George Pratt, 91 Jane street, for Britannia lamps and candlesticks of superior finish. Diploma.

John H. Whitlock, Troy, N. Y., for fine Britannia ware. Diploma.

Luther Boardman, East Haddam, Conn., T. B. Clark & Co., agents, 13 Platt st., for Britannia spoons. Diploma.

BRUSHES.

Judges—Richard Tweed, J. C. Skaden, H. R. Mount,

Abel & Bicknel, Philadelphia, Pa., for excellent specimens of cloth, hair, tooth, and shaving brushes. Gold medal.

Steele & Co., 53 Nassau st., and 305 Pearl st., for excellent specimens of feather brushes. Gold medal.

CABINET WARE.

J. C. Baldwin, Bernard Bosch, John W. Southack.

P. O'Neil, Philadelphia, Pa., for the protean chair. Gold medal.

E. Bulkley, 56 Beekman st., for an oak buffet, carving fine, and good workmanship. Silver medal.

Richard Lee, 361 Broad st., for a model of a portfolio stand. Diploma.

Charles Volkert, 93 Elm st., for very superior carved moulding, and inlaid work. Diploma.

T. Brooks, 127 Fulton st., Brooklyn, for a rosewood inlaid table and carved gilt arm chair. Silver medal.

J. H. Fraser, corner West Broadway and Reade streets, for a show case, excellent workmanship. Silver medal.

Solomon Chapin, Brattleboro, Vt., R. H. Middleton, agent, N. Y. city, for an adjusting excelsior chair. Diploma.

James H. Cooke, 36 Boadway, for a walnut desk. Diploma.

R. H. & J. G. Isham, 27th street, between 8th and 9th avenues, for the best sand and emery paper. Silver medal.

Blanchard & Parsons, 187 Water-street, for sand and emery paper. Diploma.

CAKE AND CONFECTIONERY.

Judges—James R. Smith, John W. Chambers, Wm. Hall.

Nathan Rainor, 400 Grand-street, for the best plum cake. Silver medal.

Benjamin Wilt, 324 Grand-street, for the second best plum cake. Diploma.

J. Govaert, 376 Pearl-street, for superior sweet chocolate and cocoa. Silver medal.

E. Lawrence, 11½ Third avenue, for superior fancy biscuit. Diploma.

F. Stokes, 280 Bowery, for excellent fancy biscuit. Diploma.

H. Tateosyan, 52 Second-street, for superior fig paste. Diploma.

Wm. L. Bull, 475 Broadway, for pomegranate and fruit paste. Diploma.

CARPETING.

Judges—George W. Betts, William Sloan, Geo. E. L. Hyatt.

Griswold & Co., Troy, N. Y., George Hastings & Co., agents, 5 South William-street, for the best velvet and tapestry carpeting. Gold medal.

A. & E. S. Higgins & Co., 22 Broad-street, for the second best tapestry brussels and velvet carpeting. Silver medal.

A. & E. S. Higgins & Co., 22 Broad-street, for superior imperial three-ply carpetings. Diploma.

Robert Kiers, 249 Fulton-street, Brooklyn, L. I., for superior rag carpeting. Diploma.

CARRIAGES, SLEIGHS AND AXLES.

Judges—David A. Wood, John R. Lawrence, Isaac Ford.

Williams & Dingee, 14 Amity Place, for the best carriage. Gold medal.

John H. Wood, Miner & Stevens, agents, 368 Broadway, for the best leather top wagon. Gold medal.

John C. Ham, 360 Broadway, for second best leather top wagon. Silver medal.

Theo. V. Seaman, 121 8th-street, for the best wagon without top. Silver medal.

Armour Brothers, 87 6th-street, for second best wagon without top. Diploma.

John G. Ostrom, Rhinebeck, N. Y., Wood, Tomlinson & Co., agents, 369 Broadway, for the best one-horse sleigh. A silver medal having been awarded. Diploma.

John Schoonmaker and D. Smith, Rhinebeck, Miner & Stevens, agents, for second best one horse sleigh. Diploma.

R. J. Jimmerson, cor. Avenue C and 10th street, for the best omnibus. Silver medal.

John Petric, 50 3d avenue, for the best child's carriage. Diploma.

W. H. Sanders, Smith, Van Horn & Co., agents, 271 Pearl st., for the best mail coach axles. Silver medal.

Alfred E. Smith, Bruxville, N. Y., for second best mail wagon axles. Diploma.

Saunier & Crane, 16 Amity Place, for the best carriage bows. Diploma.

Galpin & Foster, Greenpoint, L. I., for patent hub fastening. Silver medal.

Patent Band Wrench Co., Claremont, N. H., Smith, Van Horn & Co., agents, 271 Pearl street, for a patent wrench. Silver medal.

Harrison, Breese & Co., Newark, N. J., for axles and harness furniture. Diploma.

J. H. Barnes, New-Haven, Conn., for couplings for whiffletrees and drawbar. Silver medal.

CARVING.

Brewer & Connell, 52 Fulton street, for a large composition mirror frame. Diploma.

De Witt C. Mott, Morrisiana, N. Y., for carved table legs (carved by machinery.) Silver medal.

CASTINGS.

Judges—N. M. Stratton, Lewis S. Dod, James L. Jackson.

J. W. Audubon, 26th street, near 10th avenue, for the best specimen of casting in bronze. Gold medal.

Thomas F. Hoppin, Providence, R. I., for the model of the Dog "Sentinel." Gold medal.

CLOCKS AND WATCHES.

Judges—S. W. Benedict, J. Y. Savage, Jr., J. T. Williston.

Frederick Kiddle, 88 Fulton street, for the escapement for a marine time-piece. Gold medal.

Henry Sperry & Co., 159 Broadway, for an office clock. Silver medal.

James Sinclair, 176 1st avenue, for a marble time piece stand. Silver medal.

Minor's work.

Henry A. Lyon, Newark, N. J., for a magic watch case. $10 and a certificate.

CLOTHING.

Judges—Isaac Brown, E. W. Tryon, George W. Farnham.

William A. Ludlow, Newark, N. J., for the best specimen of clothing. Diploma.

Daniel P. Smith, 120 Fulton-street, for the second best clothing. Diploma.

Waterbury Button Company, Waterbury, Conn., D. M. Knight & Co., agents., 53 Cedar-street, for the best specimen of buttons. Silver medal.

D. W. Graves & Co., 22 Liberty-street, for the second best specimen of buttons. Diploma.

H. B. Pettigrew, 4 Courtlandt-street, for the best report of fashions. Diploma.

Genio C. Scott, 130 Broadway, for the second best report of fashions. Diploma.

COOPER'S WORK.

Judges—Hugh Aikman, J. M. T. Bensel, Francis O'Brien.

A. O. Merritt, at H. Hays, 146 Suffolk-street, for the best iron bound keg. Silver medal.

John H. Weeks, 7 Montgomery-street, for a miniature oval double harness cask. Diploma.

G. Moore, 24 Moore-street, for a wooden hooped keg. Diploma.

Joseph C. Way, 10½ Front-street, for a loose tierce. Diploma.

G. A. Robins, 144 Suffolk-street, for workmanship on a keg. Diploma.

Charles Graves, 52 Rose-street, for an oval keg. Diploma.

Samuel Rennie, 50 West-street, for an iron bound keg. Diploma.

James A. Coster, 67 Franklin-street, for neat cedar pails and churns. Diploma.

William Elfray, 31 Orchard-street, for a cedar pail. Diploma.

George Browndridge, 14 Franklin-street, for a Cedar churn. Diploma.

John C. Riley, 32 Robinson-street, for a brass handled pail. Diploma.

W. Wallace, 305 Greenwich-street, for an iron-bound water pail. Diploma.

Minor's Work.

William Harper, East Hoboken, N. J., for pails tub and churn. $5 and a certificate.

James Scott, 23 Old Slip, for an iron bound keg. $3 and a certificate.

William Arnold, 48 Robinson-street, for a pail. Diploma.

COTTON GOODS.

Judges—Frederick A. Lee, Haynes Lord, William E. Shepherd.

Williamsville Manufacturing company, Providence, R. I., Nesmith & Co., agents., 52 Broad-street, N. Y., for the best specimen of brown sheeting. Silver medal.

Wamsutta Mills, New-Bedford, Mass., Willard & Wood, agents, 40 and 42 Broad-street, for the best bleached shirtings. Gold medal.

New-York Mills, Oneida county, N. Y., Charles Carville, agent, 17 Broad-street, for bleached shirtings. Silver medal.

Utica Steam Mills, Utica, N. Y., for bleached shirtings. Diploma.

New-York Mills, Oneida county, N. Y., Charles Carville, agent, 17 Broad-street, for the best bleached jeans. Gold medal.

Ida Manufacturing Company, Troy, N. Y., Charles Carville, agent, 17 Broad-street, for superior cottonades. Silver medal.

Ida Manufacturing company, Troy, N. Y., Charles Carville, agent, 17 Broad-street, for the best changeable chambrays. Diploma.

Ida Manufacturing company, Troy, N. Y., Charles Carville, agent, 17 Broad-street, for the best ginghams. Silver medal.

Glasgow Manufacturing company, South Hadley Falls, Mass., Atwater, Knapp & Woodruff, agents, 33 Broad-street, for the second best ginghams. Diploma.

D. Lammot & Son, Philadelphia, Pa., Nesmith & Co., agents, 52 Broad-street., for very superior tickings. Silver medal.

J. C. Dodge & Son, Dodgeville, Mass., for printing cloth with an uncommonly perfect selvage. Diploma.

Hope Mills, Providence, R. I., for the best silesias, beautifully dyed and finished. Diploma.

Victory Manufacturing company, Schuylerville, N. Y., for the second best plain silesias. Diploma.

Lonsdale Mills, Providence, R. I., for the best twilled silesias, very perfect in color, texture and finish. Diploma.

Victory Manufacturing company, Schuylerville, N. Y., for the second best twilled silesias. Diploma.

A. & W. Sprague, Providence, R. I., Hoyt & Tillinghast, 64 Broad-street, for the best prints. Gold medal.

American Print-Works, Fall River, Mass., M'Curdy, Aldrich and Spencer, 30 Broad-street, for the second best prints. Silver Medal.

Globe Printing company, Fall River, Mass., Hoyt & Tillinghast, 64 Broad-street, for purple prints. Diploma.

W. G. B. Dexter, Pawtucket, N. J., for the best knitting cotton. Diploma.

Robert Rennie, Lodi, N. J., for handsome specimens of printing. Diploma.

Lonsdale company, Providence, R. I., for specimens of dyed cambrics. Diploma.

A. Wortendyke, Paterson, N. J., for superior chandler's wick. Diploma.

Willimantic Duck company, Willimantic, Ct., Fox & Polhemus, agents, 59 Broad-street, for best specimen cotton duck. Silver medal.

Benjamin Flanders, Baltimore, Md., for the second best specimen cotton duck. Diploma.

H. H. Stevens, Webster, Mass., Dale & Wright, agents, 44 Broad street, best linen diaper and crash. Gold medal having been before awnrded. Diploma.

D. Gavin Scott, Paterson, N. J., excellent specimens linen and cotton diaper. Silver medal.

Mrs. H. Weir, Pittstown, N. Y., for excellent specimens plain twilled and diaper brown linens. Silver medal.

John H. Bacon, Winchester, Mass., W. & J. Morrison, 9 Maiden Lane, for best lamb's wool and cotton wadding. Diploma.

CUTLERY.

Judges—A. W. Spies, Thomas C. Van Holsen, Francis Many.

Waterville Manufacturing Co., Waterbury, Conn., F. C. Wheeler, agent, 7 Gold street, for best pen and pocket knives. Gold medal.

Lamson, Goodnow & Co., Shelburne Falls, Mass., and 7 Gold street, for best table knives and forks, butcher's and other knives. Gold medal.

Pratt, Ropes, Webb & Co., Meriden, Conn., A. R. Moen & Co., 90 John street, for second best table cutlery. Silver medal.

R. Heintsch, Nassau street, cor. Fulton, for the best tailor's shears. A Gold medal having before been awarded. Diploma.

Leonard & Wendt, 29 Gold street, for the second best tailor's shears. Silver Medal.

DAGUERREOTYPES.

Judges—Napoleon Sarony, Geo. H. Hite, F. D'Avignon.

M. A. & S. Root, 363 Broadway, for the best daguerreotypes. Gold medal.

J. Gurney, 159 Broadway, for the second best daguerreotypes. Silver medal.

J. H. Whitehouse, 349 Broadway, for the third best daguerreotypes. Diploma.

J. D. W. Brinckerhoff, 383 Broadway, for still-life daguerreotype views. Silver medal.

S. A. Holmes, 289 Broadway, for still-life daguerreotype views. Silver medal.

H. Whittemore, Worcester, Mass., for the second best still-life daguerreotype views. Diploma.

Joseph Atkins, 219 Fulton street, Brooklyn, L. I., for Cameo daguerreotypes. Silver medal.

H. E. Insley, 311 Broadway, for illuminated daguerreotypes. Silver medal.

Krohl & Vetter, 499 Broadway, for phototypes. Silver medal.

Mrs. Bertha Wehnert, Beckman & Brothers, 385 Broadway, for phototypes. Silver medal.

C. C. Harrison, 85 Duane street, for daguerreotype cameras. Gold medal.

W. & W. H. Lewis, 142 Chatham street, for stools, tables, head-rests, and gilding stands, for daguerreotypists. Diploma.

D. D. T. Davie, Utica, N. Y., for a photographic camera stand. Diploma.

W. & W. H. Lewis, 142 Chatham street, for a machine for buffing daguerreotype plates. Diploma.

DIES AND CHASING.

Judges—W. H. Bridgens, Frederick Goll.

L. T. Boland, 186 Fulton street, for best crests and ornaments. Silver medal.

William M. Tompson, 169 William street, for the best book-binder's stamps, in design and finish. Silver medal.

Henry Mugge, 202 Centre street, for specimen of modeling in silver. Diploma.

DENTISTRY.

Judges—Frederick H. Clark, Jehial Parmly, George Clay.

D. H. Porter, 290 Broadway, for the best specimens of block teeth. Silver medal.

Samuel Wardle, Philadelphia, Penn., for the second best specimens of block teeth. Diploma.

John D. Chevalier, 193 Broadway, for superior dental instruments. Silver medal.

G. A. Cooper, Brooklyn, L. I., for excellent specimens of mounting of block teeth. Diploma.

DRUGS AND CHEMICALS.

Judges—James R. Chilton, Wm. H. Ellet, Isaiah Deck, John H. Currie.

Arthur Nix, Macomb's Dam, N. Y., for the best specimens of white wax and wax tapers. Silver medal.

Wm. G. Appleton, Quincy, Mass., Schieffelin and Fowler, agents, 142 Front street, for the second best white wax. Diploma.

T. Kingsford & Son, Oswego, N. Y., A. A. Thompson, agent, 196 Fulton street, for the best pure corn starch. Silver medal.

J. T. Duff, Bushwick, L. I., James Duff, agent, 150 Rivington street, for the second best corn starch. Diploma.

John D. W. Wight, & Co., Twenty-fifth street, west of Tenth avenue, Schieffelin & Fowler, agents, 142 Front street, for the best refined soda ash. Silver medal.

Globe Works, Philadelphia, Pa., A. H. Sterlin, agent, 142 Front street, for the second best soda ash. Diploma.

H. L. Kendall & Co., Providence, Rhode Island, R. H. Green & Sons, agents, 94 Wall-street, for the best bleached lard oil. Silver medal.

Litchfield & Co., 154 Front-street, for the second best lard oil. Diploma.

C. Pavey, 277 Sixth avenue, for a good quality of harness composition. Diploma.

H. L. Kendall & Co., Providence, Rhode Island, R. H. Green & Sons, agents, 94 Wall-street, for the best quality of candles. Silver medal.

Litchfield & Co., 154 Front-street, for the second best quality of candles. Diploma.

Robbinson, Wiggins & Co., 103 Wall-street, for the third best quality of candles. Diploma.

N. J. Exploring and Mining Co., 51 Liberty-street, S. T. Jones, agent, 53 Beaver-street, for a fine assortment of zinc paint. A gold medal having been before awarded—Diploma.

James H. Bell, 149 Maiden Lane, for the second best assortment of zinc paints. Silver medal.

H. W. Worthington, Philadelphia, Pa., for the best prussiate of potash. Silver medal.

Mirrielees & Brothers, Cincinnati, Ohio, Schieffelin & Fowler, agents, 142 Front-street, for the second best prussiate of potash. Diploma.

Leopold Kuh & Kreisher, 95 Cedar-street, for a good display of acids and chemicals. Silver medal.

Jackson & Domeneck, 2 Fletcher-street, for a choice assortment of chemical preparations. Silver medal.

Edward L. Youmans, 49 Cliff-street, for a well arranged chart of chemistry. Silver medal.

Hummel, Bohler & Co., Philadelphia, Pa., Hall, Ruckell & Co., agents, 220 Greenwich-street, for essence of coffee. Silver medal.

H. S. Farley, 138 Mercer-street, for very fine and beautiful specimens of Scagliola marble. Gold medal.

American Soap Company, 87 Nassau-street, for a good quality of soft soap, called Eames Cream Soap Composition. Diploma.

Gail Borden, jr., 84 William-street, for specimen of a new and highly valuable article of food called the meat biscuit, and for very fine and pure beef lard, being a fine substitute for ordinary lard. Gold medal.

B. T. Babbitt, 70 Washington-street, for a good quality of yeast powder. Diploma.

H. L. Kendall & Co., Providence, Rhode Island, R. H. Greene and Sons, agents, 94 Wall-street, for the best improved olive soap for family use. Silver medal.

William McCord & Co., 141 Sullivan-street, for the second best family washing soap. Diploma.

J. S. Fraser & Co., Boston, James Pyle, agent, 159 West-street, for a good and economical article, "the Chinese Lustral Washing Fluid." Diploma.

Thomas Husband, Philadelphia, Pa., for the best calcined magnesia, a silver medal having been before awarded, a Diploma.

Charles Ellis & Co., Philadelphia, Pa., for the second best calcined magnesia. Diploma.

Elihu B. Estes, Brooklyn, Long Island, George Cook, agent, 168 Greenwich, for the best black writing ink. Diploma.

James B. Williams & Co., Glastonbury, Connecticut, for the second best black writing fluid. Diploma.

H. Guerrier, 122 Liberty-street, for a good quality of extract of safflower. Diploma.

J. W. Kelly, 464 Broadway, for the best lemon sugar. Diploma.

William Blake, 72 East Twenty-third-street, for the best fireproof paint. Gold medal having been before awarded, a Diploma.

Mead & Fullmer, 19 Eighth avenue, for the second best fireproof paint. Diploma.

John Van Deventer, 231 Washington-street, for the best paste blacking. Silver medal.

Wotton & Annear, Philadelphia, Pa., for the second best paste blacking. Diploma.

James McCombie, 601 Broadway, for the best furniture polish. Diploma.

Reynolds & Brothers, Glenn Putnam, agent, 85 Liberty-street, for Ætna safety fuse, a silver medal having been before awarded, Diploma.

J. & J. L. Seabury, corner Chrystie and Delancy-streets, for excellent specimen of plumbago. Silver medal.

Emanuel Lyon, 424 Broadway, for the best insect exterminator. Silver medal having been before awarded, a Diploma.

W. Burger & Co , 34 Cortland-street, for a fine specimen of refined saltpetre Gold medal.

Tilden & Co., New Lebanon, N. Y., W. T. Peck, 98 John-street, agent, for a fine assortment of medicinal extracts. A silver medal having been before awarded, a Diploma.

Jonathan E. Morrill, Fall river, Massachusetts, for the best stove polish. Diploma.

R. H. & J. G. Isham, 71 Fulton-street, specimens of grinding drugs and chemicals. Diploma.

Joseph Lombard, 350 Sixth avenue, for the best vermicelli. Diploma.

L. C. Dale, Boston, Mass., Charles H. Ring, agent, John-street, corner Broadway, for tooth powder. Diploma.

E. T. Barker, Forty-third-street, between Tenth and Eleventh avenues, for the best friction matches. Diploma.

William J. Wilcox, 81 Barclay-street, for a good quality of ordinary friction matches. Diploma.

Thomas Andrews, 147 Ceder-street, for the best carbonate of soda, saleratus, &c. Diploma.

Theodore Schwartz, 14 Jacob-street, for superior Paris green. A gold medal having been before awarded. Diploma.

Chas. H. Meyer, 502 Seventh avenue, for the best refined camphor. Diploma.

S. H. Vanderhoff, 765 Greenwich, for samples of fine flavored syrups. Diploma.

Wood & Co., 18 Laight-street, for good specimens of sugar refiner's salts. Diploma.

J. W. Kelly, 464 Broadway, for prepared soda for making extemporaneous soda water. Diploma.

W. J. Roome, 390½ Broadway, for water-proof leather preservative. Diploma.

J. Milhau & Co., 183 Broadway, for a good sample of castor oil. Diploma.

B. T. Babbit, 70 Washington-street, for soap powder, a good and useful article. Diploma.

D. M. Littlejohn & Co., Bridgeport, Conn., for the best burnt umber. Diploma.

E. S. Marvin, Otis Woodward, agent, 71 Front-street, for a good quality of saleratus. Diploma.

Elihu B. Estes, Brooklyn, George Cook, agent, 168 Greenwich-street, for fancy smalts for painters, of fine colors. Diploma.

Zinsser & Scholl, 247 Broome-street, for excellent specimens of sealing wax and bleached shellac. Diploma.

Jas. S. Scofield, 127 Duane-street, for an excellent quality of refined liquorice, equal to any imported. Diploma.

Clough & Hallenbeck, 195 West-street, for a specimen of steam paint. Diploma.

John M. Stow, 317 Bowery, for an excellent quality of chemical erasive soap. Diploma.

Joseph R. Crommelin, Brooklyn, L. I., for the best mustard. Diploma.

A. J. Smith, & Co., for printers black. Diploma.

John Dwight & Co., Twenty-fifth street, west of Tenth avenue, for washing powders. Diploma.

EDGE TOOLS, &C.

Judges—J. W. Quincy, C. B. Conant, Chas. Blivin.

D. R. Barton, Rochester, N. Y., for superior carpenter's, joiners and cooper's tools. Gold medal.

D. R. Barton, Rochester, N. Y., for an improved hay knife. Diploma.

Guilford Manufacturing Company, Guilford, Conn., Boyd & Keene, agents, 9 Gold street, for superior polished and steel fire shovels and stands. Silver medal.

F. A. Rockwell, Bridgeport, Conn., for clasps and slide socket candlesticks. Diploma.

John Russell, Sing Sing, N. Y., James Horner & Co., agents, 22 Cliff-street, for a case of files of superior quality. Gold medal.

A. K. Pattison, 407 and 409 Cherry street, for beautiful enamelled stair rods. Silver medal.

S. Wilson, Quincy and Delapierre, 81 John street, for an iron vice and improved solid metalic block. Diploma.

D. Maydole, Norwich, Conn., for the best hammers. Silver medal.

D. R. Barton, Rochester, N. Y., for the second best hammers. Diploma.

Josiah Carver, 66 Beaver street, for an improved hand punch. Diploma.

Waterbury Brass Company, Waterbury, Conn., T. Whittemore, agent, for superior brass kettles. Gold medal.

Brown, Crawford and Saurbier, Newark, N. J., for saddler's and harness maker's tools of fine finish and superior quality. Silver medal.

Barclay and Boutgen, Newark, N. J., for skates with iron frames. Diploma.

T. B. and S. S. Clark, Meriden, Conn., for tinned iron wire. Silver medal.

D. D. Miller, 190 Water street, for a signal lantern and trumpet. Diploma.

Logan, Vail & Co., 9 Gold street, for the best finished wrenches. Diploma.

D. B. Logan, 9 Gold street, for a mince meat cutter, an ingenious labor-saving machine. Diploma.

L. Brands, 220½ Fifth street, for hand drills. Diploma.

S. Merritt; Bliven & Mead, agents, 9 Platt street, for strong and durable wrenches. Diploma.

D. Maydole, Norwich, Conn., Bliven & Mead, agents, 9 Platt street, for a steel spring brace, and an improvement in the manner of receiving the bits. Diploma.

Daniel Reynolds, Springfield, Mass., for horse shoes. Silver medal.

A. M. Walker, Belchertown, Mass., J. H. Adams, agent, 277 Pearl street, for wire sieves. Diploma.

R. Hoe & Co., 29 Gold street, for superior saws. Gold medal.

S. Bolles, East Smithfield, R. I., Bliven & Mead, agents, 9 Platt street, for hoes with a superior ferrule. Diploma.

Willis Churchill, Hampden, Conn., Long & Davenport, agents, 10 Platt street, for a case of augers of very superior workmanship. Silver medal.

R. F. Beebee, Harlem, N. Y., James M. Boyd, agent, 95 Maiden Lane, for a portable glue pot. Diploma.

ENGRAVING.

Judges—J. W. Paradise, Wm. H. Adams.

N. Orr, 52 John street, for the best wood engraving. Silver medal.

John Andrew, 161 Fulton street, for the second best wood engraving. Diploma.

Matthew Dripps, 103 Fulton street, for the best lithographic map engraving. Silver medal.

George H. Ives, 15 Spruce street, for the second best lithogrphic map engraving. Diploma.

J. P. Beach, Sun Buildings, Fulton street, for lithographic drawings. Diploma.

A. W. Francis, 23 Murray street, for the best stone seal engraving. Silver medal.

Richard Ten Eyck, 128 Fulton street, for superior wood engravings of machinery. Diploma.

T. Pittis, 296 Pearl street for superior stencil engraving. Silver medal.

Henry S. Smith, 1 Murray street, for card engraving. Diploma.

Henry Hays, 343 Broadway, for superior steel engraving. Silver medal.

Minor's work.

Durbin Van Vleck, 305 Fifth street, for wood engraving. $5 and a certificate.

FINE ARTS, PAINTINGS, DRAWINKS, &c.

Judges—Henry B. Smith, Francis A. March, J. H. Shegogue.

Thomas Monk, 83 Butler street, Brooklyn, L. I., for the best pastel painting. Silver medal.

James Levy, corner Eighteenth street and Third avenue, for the best statuary marble mantle piece. Gold medal.

Albert P. Moriarty, 134 Eighteenth street, for painting on hose carriages. Silver medal.

W. J. Hanington, 364 Broadway, for the best stained glass. Silver medal.

Samuel West, 95 Fourth avenue, for the best landscapes in stained glass. Silver medal.

Louis Bail, 557 Houston street, for Crayon drawings. Silver medal.

Angeline R. Owen, 203 Henry street, for colored Crayon picture and oil painting. Diploma.

John Lovejoy, Jr., 31 Bond street, for Crayon drawings. Diploma.

William Sear, 68 Greene street for Crayon drawing. Diploma.

Cornelius L. Walley, 425 Third avenue, for a Crayon drawing of a locomotive. Diploma.

Benjamin Yates, 259 Henry street, for drawings. Diploma.

G. W. Hoffman, 29 First street for an oil painting. Diploma.

W. R. Claperton, 31 East Twenty-seventh street, for a water-color painting. Diploma.

Mrs. Jane Hart, 251 Broadway, for engravings colored in oil. Diploma.

Mr. and Mrs. Morrison, Williamsburgh, L. I., for map drawing and ornamental lettering. Diploma.

Joseph E. Nourse, Fitchburg, Mass., for a pencil drawing. Diploma.

James O'Malley, 293 Broome street, for oil paintings, "Napoleon and Nativity." Silver medal.

Louis Bail, 557 Houston street, for a center piece in plaster. Diploma

Minor's work.

Donald McKensie, cor. 37th street and 2d avenue, for crayon drawings. $5 and a certificate.

J. L. Eckel, 35 Beekman street, for crayon drawings. $5 and a certificate.

J. Bowers Lee, 170 East 14th street, for crayon drawings. $5 and a certificate.

Miss Matilda C. Stephenson, East Brooklyn, for painting on glass Silver medal.

FIRE ARMS.

Judges—John P. Moore, Joseph Hall, Joseph Rose, Jr.

G. H. Penfield, 37 Nassau street, for a superior breech loading rifle, (Sharp's patent.) Gold medal.

W. W. Marston, 37 Chatham street, for a breach loading gun, with cap primer. Silver medal.

John B. Klein, 109 Canal street, for a breech loading gun, with cap primer. Silver medal.

C. S. Dixon, 189 Broadway, for the best self-loading and priming gun. Silver medal.

Edward Maynard, Washington, D. C., for the best system of priming for fire arms. Gold medal.

S. B. Armory, Goshen, N. Y., for the best rifle, as to workmanship. Silver medal.

Williams & Barnes, New-London, Conn., for Brown's whaling gun. Silver medal.

Remmington & Son, Herkimer, N. Y., for workmanship on a gun. Diploma.

Samuel Colt, Hartford, Conn., for the best revolving pistols of superior workmanship. Gold medal having been before awarded. Diploma.

Sprague & Marston, 37 Chatham street, for second best revolving pistols. Silver medal.

Crittenden & Tibbals, South Coventry, Conn., R. D. Solace, agent, 169 Pearl street, for the best percussion caps. Silver medal.

Edward Payson, for the second best percussion caps. Diploma.

FIRE-WORKS.

Judges—Lewis Forman, James R. Smith, Wm. Ebbitt, John A. Bunting.

J. S. & I. Edge, Jersey city, N. J., for the best display of fire-works. $50.

FISHING TACKLE.

Judges—William Vincent Wallace, J. M. Ashborn, E. Jollie.

J. & J. C. Conroy, 52 Fulton street, for the best fishing tackle and reels. Silver medal.

J. B. Crook & Co., 50 Fulton street, for the second best fishing tackle. Diploma.

J. J. Brown, 103 Fulton street, for the second best reels and fine specimens of cotton and flax lines. Diploma.

William Tansig & Co., 186 Pearl street, for excellent seines. Diploma.

H. Pritchard, 31 Charlton street, for artificial flies. Silver medal.

GLASS, EARTHENWARE AND CHINA DECORATIONS.

Judges—James Neeves, Henry Haydock, Davis Collamore.

Brooklyn Flint Glass Company, 30 South William street, for the best plain, cut and pressed flint glass. A gold medal having been before awarded. Diploma.

Brooklyn Flint Glass Company, for the best Venetian and Bohemian glassware. Gold medal.

Brooklyn Flint Glass Company, for the best druggists' jars. Silver medal.

Andrew Ross, 125 Maiden Lane, for druggists' glassware. Silver medal.

Woodward, Blakeleys & Co., East Liverpool, O. W. S. Hammersly & Co., agents, 11 Old Slip, for the best Rockingham ware. Gold medal.

Beman & Case, corner Prince street and Broadway, for the second best Rockingham ware. Silver medal.

Bennett & Brother, Pittsburgh, Pa., W. S. Hammersly & Co., agents, 11 Old Slip, for the third best Rockingham ware. Diploma.

L. D. Gerardin, Jersey city, N. J., for the best decoration on porcelain. Gold medal.

Woram & Haughwout, 561 and 563 Broadway, for the second best decoration on porcelain. Silver medal.

Alexander Young, Fourth street, between Second and Third Avenue, for the best terra cotta ware. Gold medal.

Edward Roach; Roach Brothers, agents, 34 Fulton street, for the second best terra cotta ware. Silver Medal.

George Saul, Melbourne, N. Y., for handsomely bronzed terra cotta ware. Diploma.

WINDOW GLASS.

Judges—S. N. Dodge, John Muckel.

New Columbia Glass Company, New Columbia, N. J., Petit & Co., agents, 163 Front street, for window glass, the best color. Silver medal.

Jackson's Glass Works, N. J., Richards & Brothers, agents, for specimens of window glass, the best in surface. Silver medal.

Joshua Shaw, 142 Nassau street, for improved glazier's diamonds, beautifully finished. Silver medal.

HATS, CAPS, AND FURS.

Judges—Charles St. John, Nathan Starr, E. F. Ryder.

John N. Genin, 214 Broadway, for the best silk hat. Silver medal.

W. A. Archer, 270 Greenwich, for the second best silk hat. Diploma.

John N. Genin, 214 Broadway, for the best soft cassimere hats. Diploma.

John N. Genin, 214 Broadway, for the best boys' and misses fancy hats and caps. Silver medal.

Union Hat Company, 210 Broadway, for the second best boys and misses' fancy hats. Diploma.

C. Knox, 128 Fulton street, for the second best caps. Diploma.

John N. Genin, 214 Broadway, for the best specimens of fancy furs. Silver medal.

Francis Landry, 693 Broadway, for the best sable tipped furs. Silver medal.

Thomas Young, 96 Bowery, for the second best fancy furs. Diploma.

W. A. Archer, 270 Greenwich, for the best sleigh robe. Silver medal.

John N. Genin, 214 Broadway, for the second best sleigh robe. Diploma.

C. Knox, 128 Fulton street, for the best stuffed fancy furs. Silver medal.

STRAW HATS, &C.,

Judges—Chas. Miles, J. H. Hills, T. A. Napier, E. C. Blake.

E. Briggs, Jr., Middleborough, Mass., for the best straw bonnet. Silver medal.

L. Chapin, 22 John street, for the second best straw bonnet. Diploma.

Mrs. E. N. Robertson, New-York, for the best straw lace. Diploma.

Miss J. H. Hudson, Franklinville, L. I., for the application of the Southern pine leaves in the manufacture of hats. Gold medal.

HEMP, &C.

Judges—John Travers, Wm. E. Forbes.

C. McWay & Son, Williamsburgh, L. I., for the best sample of American dew rotted hemp. Silver medal.

Lewis S. Morris, 10 Broadway, for the second best American dew rotted hemp. Diploma.

W. S. Butler, Brooklyn, L. I., for superior water rotted hemp. Silver medal.

Dunnel, Saxton & Duval, Mo.; Josiah Macy and Sons, agents, 189 Front street, for the best sample of American dew rotted undressed hemp. Diploma.

Wm. F. Shiddell, Lexington, Ky., for a beautiful bale of American dew rotted hemp. Gold medal.

John Galbraith, Wisconsin, for superior flax. Gold Medal having been before awarded. Diploma.

Lawson & Roberts, 112 Pearl street, for an assortment of cordage and twine. Silver medal.

IMITATIONS WOOD AND MARBLE GRAINING.

Judges—Geo. Clark, G. Palmer. E. B. Derby.

Mr. Garthwaite, 143 Sixteeth street, for the best specimen of oak graining. Silver medal.

J. C. Quarterman, 114 John street, for the second best specimen of graining. Diploma.

H. Goulet, 66 John street, for the best specimen of general graining. Silver medal.

Wm. F. Field, 102 Avenue C., for a specimen of rose wood graining. Diploma.

INDIA RUBBER AND GUTTA PERCHA.

Judges—Stephen W. Smith, James R. Smith, John Rynex.

Charles Goodyear, 59 Maiden lane, for specimens of several novel applications of India rubber which promises great utility to the arts. Diploma.

H. H. Day, 23 Courtland street, for the best India rubber shoes. Silver medal.

Newark India Rubber Company, Newark, N. J., Hiram Hutchinson, agent, for the second best India rubber shoes. Diploma.

H. H. Day, 23 Courtland street, for excellent India rubber car springs. Diploma.

John Rider, 28 Pine street, for a successful attempt to vulcanize gutta percha. Gold medal.

IVORY TURNING.

Judges—F. Wolf, Samuel Shardlow.

F. G. Ford, 90 Fulton street for superior ivory turning. Silver medal.

LAMPS AND CHANDELIERS.

Judges—W. H. Starr, James Donaldson, James G. Moffat.

Woram & Haughwout, 561 Broadway, for the best lamps and candelbras. Silver medal.

Eagles & Lockwood, Newark, N. J., for the best coach lamps. Silver medal.

Vanderhoff & Bonsall, 10 Laurens street, for the second best coach lamps. Diploma.

Olcott & Brothers, Rochester, N. Y., for a locomotive lamp. Silver medal.

LEATHER.

Judges—A. H. Kimmel, George Evans, H. M. Warren, William Dymock.

J. W. Beardsley, 7 Ferry street, for the best specimens of stuffed boot and French finished morocco. Silver medal.

Leonard, Gallager & Shevill, 51 Ferry street, for the best glazed kid morocco. Silver medal.

J. W. Beardsley, 7 Ferry street, for the second best kid morocco. Diploma.

Leonard, Gallager & Shevill, 51 Ferry street, for the second best French finished morocco. Diploma.

Adam Smith & Son, 50 Ferry street, for best colored morocco. A Silver medal having been before awarded. Diploma.

George P. Brown, Newark, N. J., for best enamelled leather. Diploma.

Joseph Bizard, Gowanus, L. I., for patent leather calf and goat skin. Diploma.

Clark & Chatfield, Cornwall, Orange County, N. Y., E. S. Brown, agent, 4 Ferry street, for finished calf skin. Diploma.

George Dudley, Winsted, Conn., James Cook, agent, 295½ Pearl street, for bark tanned sheep skins. Diploma.

Near & Teller, Kingston, N. Y., A. H. Brahe & Co., agents, 27 Ferry street, for oak tanned sole leather for ladies' work. Silver medal.

Rees & Hoyt, 37 Spruce street, for leather for belting. Silver medal.

John H. Bowie & Co., 30 Ferry street, for Croton hose, leather pipes and fire buckets. Gold medal having been before awarded. Diploma.

Wm. G. Broadwell, Newark N. J., for white leather dressed for organs, shoe lining, &c. Silver medal having been before awarded. Diploma.

Lyon & Co., Twenty-eighth street, near Eleventh avenue, for scouring stones. Diploma.

LINEN THREAD.

Judges—Frederick A. Lee, Wm. E. Shepard, Haynes Lord.

F. W. Farnam & Co., Cohoes, N. Y., Marcus Spring & Co., agents, 41 Exchange Place, for the best plain and satin finished linen thread. Gold medal.

Eldridge & Christie, Troy, N. Y., Coffin, Bradley & Co., agents, 44 Exchange Place, for second best linen thread. Silver medal.

BANK LOCKS.

Judges—L. C. Pettis, Paul Stillman, Benjamin Aycrigg.

Day & Newell, 589 Broadway, for the best bank lock. Gold medal.

F. B. Pye, 424 Broadway, for a bank lock with a chronometer attachment. Gold medal.

Lewis Lillie, Troy, N. Y., for an excellent safe lock. Silver medal.

J. H. Butterworth, Dover, N. J., for an excellent safe lock. Silver medal.

F. C. Goffin, 62 Cannon street, C. J. Gaylor, agent, for an excellent safe lock. Silver medal.

LOCKS, DOORS AND HINGES.

Judges—Theophilus Culp, Samuel Boyd.

C. Cartlidge & Co., Green Point, L. I., E. B. Watrous, agent, 72 Maiden Lane, for the best porcelain door knobs. Gold medal.

Baldwin & Many, 49 John street, for the best mounted door knobs. Gold medal.

Jones & Farwell, Boston, Mass., for the mounting of glass door knobs. Silver medal.

George H. Swords & Co., 116 Broadway, for second best mounted door knobs. Diploma.

Joralemon & Fielding, Newark, N. J., for piano forte and melodeon locks. Diploma.

W. & E. Fitch, New-Haven, Conn., Long & Davenport, agents, 10 Platt street, for circular cup cabinet locks. Diploma.

Pierpont, Mallory & Co., New-Haven, Conn., for a card of locks. Silver medal.

New-England Butt Company, Providence, R. I., N. P. Pettibone, agent, 19 Platt street, for superior butt hinges. Diploma.

MACHINERY, MODELS AND NEW INVENTIONS.

Judges—Isaac W. Ayres, A. B. Taylor, Joseph Dixon, James Bogardus, Samuel S. Ward.

Lowell Machine Shop, Lowell, Mass., for the best engine lathe, slotting machine, planing and drilling machine. Gold medal.

E. & S. D. Gould, Hedenbergh works, Newark, N. J., for the second best compound planing machine, wheel tooth cutting engine and vertical drill. Silver medal.

Scranton & Parshly, New-Haven, Conn, for lathes and tools. Diploma.

M. Sault & Co., New-Haven, Conn., for an engine lathe, with an improved method of attaching the slide rest to the shears. Silver medal.

George H. Dodge, Dodgeville, Attleboro', Mass., for the best cop spinner. Gold medal.

Wanton Rouse, Taunton, Massachusetts, for a cop spinner. Gold medal.

I. M. Singer, 256 Broadway, New-York, for the best sewing machine. Gold medal.

E. & T. Fairbanks, St. Johnsbury, Vermont, for the best railroad track, depot, warehouse and counter scales. A gold medal having been before awarded, Diploma.

S. T. McDougall, 258 Pearl-street, for second best platform scale. Silver medal.

Duryee, Forsyth & Co., 166 Pearl-street, for the third best platform scale. Diploma.

A. W. Cary, Brockport, N. Y., for the best rotary force pump. Gold medal.

C. Warner, Washington City, D. C., Middleton & Pease, agents, for a pump. Silver medal.

Patrick Kirby, 197 Water-street, New-York, for the third best rotary pump. Diploma

H. Stanley, Troy, N. Y., for the best cast-iron car wheel and parts. Silver medal.

H. Dayton, Munn & Co., agents, 128 Fulton-street, for the second best cast-iron car wheel. Diploma.

A. W. Cary, Brockport, N. Y., for simple and efficient hose couplings. Silver medal.

John D. Ascough & Co., 191 West-street, for a superior ice cutter and ice marker. Silver medal.

Isaacs & Darling, 161 Wall-street, for a superior self-clearing anchor. Silver medal.

Oscar Jordan, Painted Post, N. Y., for hub boring and morticing machine. Silver medal.

George P. Gordon, 70 Nassau-street, for a printing press. Gold medal.

William Platt & Co., Waterford, N. Y., for stocks, taps and dies. Diploma.

Reeves, Buck & Co., Philadelphia, Pa., for Clay's taper rolled iron. Silver medal.

G. G. Hubbard, Boston, Massachusetts, for a telegraph. Silver medal.

A. & C. Bush, Fall River, Mass., for chain bolts. Diploma.

William Gee, 66 Gold-street, for a soda-water machine of excellent workmanship. Silver medal.

John H. Smith, Brooklyn, Long Island, for eye and ship's clews. Diploma.

James Ives & Co., Hamden, Conn., for water rams with glass cylinders. Silver medal.

Augustus Williams, Novelty Iron Works, Stillman, Allen & Co., agents, for an alarm water gauge, a valuable and useful invention. Gold medal.

E. J. Stripp, Trenton, New Jersey, for weaver's shuttles of superior quality and workmanship. Diploma.

B. Kreischer, 58 Goerck-street, for the best fire bricks. Silver medal.

Alfred Hall, Perth Amboy, for the second best fire bricks. Diploma.

Silas C. Herring, 135 Water-street, for the best iron safe. Gold medal.

Pierce & Valentine, 122 Water-street, for the second best iron safes. Silver medal.

World's Safe Company, Lewis Lillie, agent, Troy, N. Y., for safes made from chilled and cast-iron, impenetrable to burglars. Gold medal.

Rees & Hoyt, 37 Spruce-street, for the best leather machine banding. Gold medal having been before awarded, a Diploma.

M. Jeffrey; S. P. Dodge, agent, Newburg, N. Y., for an ingeniously constructed force pump. Diploma.

Seyfert, McManus & Co., Pa., A. B. Wood, 23 Platt-street, agent, for boiler flues of excellent workmanship. Silver medal.

Harrison, Breese & Co., Newark, New Jersey, for an embossing machine for leather; a very superior article. Silver medal.

Robert D. Porter, for a smith's forge tuyere. Silver medal.

Junius Judson, Rochester, N. Y., for the best governor valves. Gold medal.

S. Stow & Co., Southington, Conn., for the best set of tinman's machines. Gold medal.

H. S. Berry, Westerly, Rhode Island, for temples for power looms. Diploma.

H. Grannis & Co., Rochester, N. Y., for a mode of fastening tinman's machines. Diploma.

D. H. Butz & Co., 15 Canal-street, for basin and steam cocks. Silver medal.

Duncan & West, 54 Beekman-street, for mangles. Diploma.

C. & G. M. Woodward, 71 Beekman-street, for coil of pipe and steam fittings. Diploma.

Tuttle Manufacturing Company, Naugatuck, Connecticut, for excellent cast steel solid shank hoes. Silver medal.

S. Cohen, 188 William-street, N. Y., for gilt mouldings. Diploma.

E. B. Clayton & Sons, 161 Pearl-street, for an ingenious and labor-saving numbering machine. Gold medal.

Roys & Wilcox, Berlin, Conn., for Wright's sheet-iron folding machine, a very ingenious and useful invention. Diploma.

Roys & Wilcox, Berlin, Connecticut, and Francis Blake, Boston, Massachusetts, for Flander's rotary shears, a very useful and ingenious machine. Gold medal.

John M. Smith, 468 Broadway, for superior refrigerators. A silver medal having been before awarded, a Diploma.

J. P. Stillman & Co., Westerly, Rhode Island, for an ingenious self-stripping carding machine, commending itself by its life-like accuracy in operation. Gold medal.

Joshua Low, 47 Dey-street, J. P. Pirsson, agent, 5 Wall, for improved steam pressure guages. Silver medal.

F. Harris & Son, Elizabethtown, New Jersey, for the best smut and scouring machine. Gold medal.

Leonard Smith, Troy, N. Y., for the second best smut machine. Silver medal.

Thomas R. Bailey, Lockport, for a self-centering and releasing lathe. Silver medal.

Nelson Edwards, 10 Fulton-street, A. F. Chapman, agent, 2 Franklin-street, for alarm water guage. Silver medal.

Samuel Hall, 129 Amos-street, for samples of machine-made washers. Diploma.

F. J. Austin & Co., corner Centre and Reade-streets, for a very beautiful embossing press for books. A gold medal having been before awarded, a Diploma.

Alfred Hall, Perth Amboy, N. J., for a good machine for making bricks. Silver medal.

F. H. Bartholomew, 84 Marion-street, for the second best brass cocks. Diploma.

Abraham Longbottom, Centre-street, for an excellent tesselated tile mould. Diploma.

F. S. Austin, Centre-street, corner Reade, for the best paper cutting machine. Gold medal.

New-York Scale Maker's Company, 39 Greene-street, for well made scales and a weighmaster's frame. Diploma.

Schwart & Fisher, 295 Front-street, for the best smith's bellows. Diploma.

Alexander Stiven, corner Avenue C and Twelfth-street, for a good concentric chuck. Diploma.

Ezra Ripley, Troy, N. Y., for chill irons for casting rasps, &c., a very useful invention. Silver medal.

Ezra Ripley, Troy, N. Y., for a very good machine for forming teeth on mill plates, rasps, &c. Diploma.

John W. Cochran, 52 South-street, for a stone cutting machine. Diploma.

James Lightbody, Jersey City, N. J., for a good jacquard machine. Silver medal.

N. Hayman, 376 Greenwich-street, for a signal bell for steamers. Diploma.

Long & Davenport, 10 Platt-street, for an excellent portable forge and bellows. Diploma.

Samuel Huse, Boston, Mass., William Burroughs, agent, 80 Broadway, for a well made water metre, exhibiting much knowledge and skill in its construction. Gold medal.

R. D. Carver, Matteawan, N. Y., for a patent harness machine. Diploma.

Higgins & Son, 70 Frankfort-street, for the best made mill for rolling gold and silver. Silver medal.

Adams & Son, North Hadley, Mass., for an improved felloe machine. Silver medal.

E. C. Seamen, Philadelphia, Pa., for the best ice cream freezer, being one of the best things of its kind exhibited. Silver medal.

S. A. Clemens, Springfield, Mass., for a skilfully made hemp and flax machine. Gold medal.

J. B. Tarr, Albany, N. Y., for a fire engine of great power and beauty. Gold medal.

Galpin & Foster, Green Point, L. I., for an ingeniously contrived hub and axle. Diploma.

William Post, Flushing, L. I., for sliding shutters. Diploma.

R. J. Gatling, Indianapolis, Indiana, for a flax brake for domestic purposes. Diploma.

Gates & McKnight, for dies for cutting screws. Silver medal.

D. Chapman, 373 Bowery, for an instrument sharpener. Diploma.

Gardner & Bonnel, 272 Fifth street, for a new governor and power test. Silver medal.

Charles Carnell, Philadelphia, Pa., for a brick machine. Silver medal.

P. A. Leonard, 60 Pearl street, for a nest of pulleys. Diploma.

E. I. Stearns, Maryland, F. H. Ellis, Jersey city, agent, for a self-adjusting railroad switch. Diploma.

A. H. Wright, 522 Water street, for a rail car coupling. Diploma.

Ransom Cook, Saratoga, N. Y., for an hydraulic blowing wheel. Silver medal.

B. E. & Ira Buckman, Jr., 94 Fulton street, for a rotary clothes drier. Diploma.

Griffith Co., 27 Spruce street, for patent leather banding. Diploma.

J. B. Henshaw, 96 John street, for a pump for draining pur poses. Diploma.

Hayden & Sanders, Haydenville, Mass., E. W. Gire, agent, 219 Pearl street, for croton faucets and steam cocks. Diploma.

D. Dick, Meadville, Pa., for boiler shears. (A gold medal having been before awarded.) Diploma.

E. Barrows, 228 Water street, for a rotary engine. Silver medal.

John Maxson, De Ruyter, N. Y., for a door spring. Silver medal.

J. P. & J. A. Blake, Waterbury, Conn., for jeweller's rollers. Silver medal.

Amos Waterbury, Stamford, Conn., for a model steam engine. Diploma.

E. S. Scripture, Green Point, L. I., for a model of a tire setting machine. Diploma.

J. P. Pirsson, 5 Wall street, for an odontograph. Diploma.

R. E. Dibble, Astor House, New-York, for a model of a steam boiler. Diploma.

Lucien Disman, Ohio, for a spring door. Diploma.

Alexander Stiven, corner Avenue C. and Twelfth street, for pumps. Silver medal.

A. G. Heckrotte, Cumberland, Md., for a dirt rejector for railroad use. Diploma.

A. G. Heckrotte, Cumberland, Md., for a car coupling. A silver medal having been before awarded. Diploma.

W. A. Browning, Fishkill, N. Y., for a card setting machine. Diploma.

Carlisle Estbrook, Norwich, Conn., for a machine for facing millstones. Diploma.

S. S. Morris & Co., Philadelphia, Pa., for a model of a brick machine. A silver medal having been before awarded. Diploma.

W. R. Nevins, 87 Eldridge street, for a biscuit making machine. Diploma.

F. Emerson, Boston, Mass., for ventilators for ships and buildings. Silver medal.

Tuttle & Bailey, 293 Pearl street, for excellent ventilators. Silver medal.

Charles Ross, Rochester, N. Y., for a portable mill. A silver medal having been before awarded. Diploma.

D. Griffin, 192 Broadway, for a fuel saving apparatus. A gold medal having been before awarded. Diploma.

D. Griffin, 192 Broadway, for a mode of heating air, to be used in large manufacturing establishments. A gold medal having been before awarded. Diploma.

Fowler M. Ray, 104 Broadway, for the best india rubber car springs. A gold medal having been before awarded. Diploma.

D. Adee, 107 Fulton st., for specimens of steel. Silver medal.

Minor's work.

Morgan Jones, 54 Centre street, for a steam engine and boiler. $10 and a certificate.

Walter G. Cassin, 42 North Moore street, for a model of a steam engine. $5 and a certificate.

William H. Mills, 70 Chatham street, for a model of a steam engine. $3 and a certificate.

John Mullins, 15 Canal street, for workmanship on brass cocks. $3 and a certificate.

William Conway, 15 Canal street, for workmanship on brass cocks. $3 and a certificate.

M. Killoran, 15 Centre street, for workmanship on brass cocks. $3 and a certificate.

MANUFACTURERS' ARTICLES—WEAVERS' REEDS AND HARNESS.

Judges—George H. Dodge, G. L. Ford

J. A. Gowdey & Son, Providence, R. I., Andrews & Jessup, agents, 70 Pine street, for best weaver's reeds. Silver medal.

George Kirk, Paterson, N. J., for second best weavers' reeds. Diploma.

R. D. Carver, Matteawan, N. Y., for the best harness. Silver medal.

M. Finkle, Utica, N. Y., for copper harness, good for heavy work. Silver medal.

MATHEMATICAL AND PHILOSOPHICAL INSTRUMENTS.

Judges—William H. Ellet, Daniel Pike, Aaron Rand.

Henry Fitz, 237 Fifth street, for an equatorial telescope. Gold medal.

Fehrens & Albrecht, 136 Nassau street, for chemical balance. Diploma.

F. S. Sibeunmann, 154 Fulton street, for mathematical drawing instruments. Diploma.

A. Derne, 376 Pearl street, for opera glasses. Silver medal.

Julius E. Erlicke, 154 Fulton street, for a well made and valuable elliptograph. Diploma.

Fehrens & Albrecht, 136 Nassau street, for the second best mathematical instruments. Diploma.

James Prentice, 181 Broadway, for the best mathematical instruments. Silver medal.

Woolcocks & Ostrander, 57 Ann street, for the best speaking tubes with alarm whistle. Diploma.

B. M. Van Derveer, Clyde. Wayne county, N. Y., for arithmetical tables. Diploma.

John W. Norton, 177 Broadway, for a valuable magnetic enunciator. Silver medal.

Minor's Work.

Benjamin D. F. Wells, 237 Fifth street, for a telescope. $10 and a certificate.

Edward Striglitz, 154 Fulton street, for mathematical instruments. $5 and certificate.

A. Francis, 23 Murray street, for compasses and drawing pen. $5 and certificate.

Henry Martin, 120 Water street, for levels and compasses. $3 and a certificate.

MUSICAL INSTRUMENTS.

Judges—Wm L. Bloomfield, C. G. Christman, Warren Hill.

Wm. B. Tilton, Carrolton, Ala., for an excellent improvement on the violin. Silver medal.

Hugh Cottier, Brooklyn, L. I., for the best flute. Silver medal.

Gasper Godone, 403 Broadway, for a guitar, of good workmanship. Diploma.

Jacob Cohen, of 26 West Broadway, for best workmanship on banjo. Diploma.

J. Jacobs, 100 Chatham street, for a very superior banjo. Diploma.

NAVAL ARCHITECTURE.

Judges—Wm. H. Webb, Wm. H. Brown.

George Steers, 91 Cannon street, for a model of the yacht America. Gold medal.

Smith and Dimond, foot of Fourth street, for the best model of a steamship. Gold medal.

Henry Owens, 158 Lewis street, for the best workmanship of model of steamship Illinois. Silver medal.

Leonard H. Boole, 191 East Fifteenth street, for model of clipper ship. Silver medal.

Charles Perley, 114 Columbia street, for ship's capstan and side winch. Silver medal.

Charles Perley, 114 Columbia street, for a cat head stopper. Silver medal.

Daniel Flynn, New-York, for a self gravitating and pendulating portable berth bed. Diploma.

NEEDLE WORK, EMBROIDERY AND FANCY ARTICLES.

George Brodie, 51 Canal street, for the best cloaks and mantillas. Gold medal.

Molyneaux Bell 58 Canal street, for an opera cloak of superior workmanship. Silver medal.

Beekman & Co., Canal street, for the third best cloak. Diploma.

Mrs. R. Van Houten, 82 Nassau street, for the best shirts. Silver medal.

Van Houten & Brooks, 446 Broadway, for the second best shirts. Diploma.

C. Linherr, 293 Broadway, for the best ornamental hair work for jewellers. Silver medal.

J. & Robert Link, 181 Broadway, for the second best ornamental hair work. Diploma.

Lion Guilleaum, 122 William street, for the best artificial flowers and artificial leaves. Silver medal.

Susan A. Johnson, 79 East Sixteenth street, for the second best artificial flowers. Diploma.

Mrs. Wm. Simmons, 564 Broadway, for the best ladies' bonnets. Silver medal.

Madame Lavene, 133½ Spring street, for the second best ladies' bonnet. Diploma.

Miss L. H. Sargeant, 2 Clinton Place, for the best wax flowers. Silver medal.

Miss Jane Harris, for the second best wax flowers. Diploma.

Mrs. Van Skelline, 247 Broadway, for the best paper flowers. Diploma.

Charlotte Wanne, 136 Greene street, for paper flowers. Diploma.

Mrs. H. M. Chapman, Camden, N. J., for the best shell box. Diploma.

Mrs. Haight, 772 Washington street for the second best shell box. Diploma.

Miss Courraisien, 273 Greenwich street, for the best raised worsted work. Diploma.

Mrs. Mary A. Maier, 12 Doyer street, for the second best raised worsted work. Diploma.

Mrs. Odell, Newburgh, N. Y., for worsted chair embroidery. Silver medal.

Miss M. A. S. McBride, for the best worsted embroidery. Silver medal.

Miss Julia Marcet, 84 Orchard street, for the second best worsted embroidery. Diploma.

Public School No. 2, Williamsburgh, L. I., for worsted embroidery. Diploma.

Miss Josephine B. Teller, 80 Second street, for the best embroidered slippers. Diploma.

Mrs. Golder, 197 Fifth street, for the second best embroidered slippers. Diploma.

Caroline Hallock, 191 Monroe Place, for the best worsted mat. Diploma.

Mrs. Robinson, 243 Washington street, for the second best worsted mat, and embroidered port-folio. Diploma.

Miss L. Devoe, 80 Washington street, for worsted work on cloth. Diploma.

Miss Caroline Handford, Williamsburgh, L. I., for the best worked fire screens. Diploma.

James Schiess, 29½ Division street, for the best embroidery on cambric. Silver medal.

Mrs. R. Van Houten, 82 Nassau street, for the second best embroidery on cambric. Diploma.

Mrs. Harriet Wright, Brooklyn, L. I., for the best specimen of knitting. Diploma.

Minerva B. Johnson, 291 Broome street, for the second best specimen of knitting. Diploma.

Miss Ann Croes, Sidney Place, Brooklyn, L. I., for knit worsted shoes and hood. Diploma.

Institution for the Blind, for a case of fancy articles. Silver medal.

Sarah Hanford, 162 Graham avenue, Williamsburgh, for a woven table cloth. Diploma.

Mrs. Fanny Crocheron, Staten Island, for the best knit quilt Diploma.

Mary E. Arnold, R. I., for the best crochet counterpane. Diploma.

Miss Maria Frey, for the best patchwork quilt. Diploma.

Mrs. Sarah Barber, 133 Walker street, for patchwork quilts. Diploma.

Mrs. Rachel Henneburger, Baltimore, Md., for a very ingenious turkerian fur tippet. Diploma.

Mrs. Edmonds, 29 Howard street, for the best wax fruit. Silver medal.

George Edmonds, 29 Howard street, for the second best wax fruit. Diploma.

James Bowles, 455½ Broadway, for the best corsets. Silver medal.

Elizabeth Webber, 205 6th avenue, for a vase of spice flowers. Diploma.

Elias Combs, 244 Grand street, for the best regalia. A silver medal having been before awarded. Diploma.

William W. Osborne, 278 Grand street, for the second best regalias. Diploma.

Clarissa Hart, 84 Forsyth street, for an excellent piece of home made linen Silver medal.

Miss Rhoda Kelley, 247 7th street, for the best lamp mat. Diploma.

Miss Josephine H. Peck, 29 Division street, for a flower basket. Diploma.

Eliza Wolcott, 24 Norfolk street, for a muskmelon seed bag. Diploma.

Mrs. L. Many, Long Island, for a lady's bag. Diploma.

Miss M. Hamilton, 12 Vandam street, for a crape embroidered shawl. Diploma.

James Scheiss, 29½ Division street, for the best silk embroidery. Diploma.

Mrs. W. Lindner, for the second best silk embroidery. Diploma.

PAPER HANGINGS AND UPHOLSTERY.

Judges—John L. Gratacap, John W. Miller, William H. Curtis.

Curtis & Moore, 22 and 24 West 13th street, for the best specimen of marble and oak paper hangings. Silver medal.

Robert Graves, Brooklyn, L. I., for the second best specimen of marble and oak paper hangings. Diploma.

Eames, Perry & Co., Brooklyn, L. I., for the best specimen of velvet paper hangings. Silver medal.

Pratt & Hardenburgh, 32 Broadway, for the best wall paper. Diploma.

A. Phillips, 15 Thompson street, for the best specimen of paper hanging. Diploma.

New-York Institution for the Blind, for the best hair mattress. Silver medal.

Sturgis & Porter, Philadelphia, Pa., for the best spring mattress and bolster. Silver medal.

McElwee & Pierrie, 768 Broadway, and J. Sommer, 452 Broome street, for the second best spring mattresses. Diploma to each.

D. Horan, 72 Bowery, for the best specimen of horse hair. Diploma.

PEARL WORK, POCKET BOOKS AND COMBS.

Judges—Mason Thompson, L. Chapman, Robert S. Lyons.

A. Ruddock, Philadelphia, Pa., for the best pearl work boxes and dentists' instrument handles. Silver medal.

G. R. Cholwell, 26 Maiden Lane, for the best pearl and shell card cases, and pearl and leather port-monnaies. Silver medal.

H. Beaumont, 86 Fulton street, for a superior leather writing desk. Diploma.

David E. Mozier, Williamsburgh, L. I., for the best horn combs. Silver medal.

PENMANSHIP.

Judges—H. W. Ford, F. O. Wakeman, Gordon L. Ford.

George Bristow, Philadelphia, Pa., for the best specimen of business penmanship. Silver medal.

W. C. Morrison, Williamsburgh, L. I., for the second best specimen of business penmanship. Diploma.

A. H. Wheeler, 30 East 20th street, for the best specimen of ornamental penmanship. Silver medal.

G. L. Haight, Brooklyn, L. I., for the second best specimen of ornamental writing. Diploma.

Minor's work.

W. O. Jube, 145 Chrystie street, for a fine specimen of business penmanship. $5 and a certificate.

PERFUMERY.

Judges—James R. Chilton, John H. Currie.

Xavier Bazin, Philadelphia, Pa., for the best assortment of perfumery, extracts, fancy soaps and shaving cream. Silver medal.

Thomas Worsly & Co , Philadelphia, Pa., for the second best assortment of perfumery. Diploma.

Charles T. Hedenberg, 19 Dey street, an excellent quantity of Cologne water. Diploma.

William Walker, 156 Cherry street, for hair oils, &c , well perfumed and tastefully put up. Silver medal.

Eugene Dupuy, 609 Broadway, for a good specimen of perfumery. Diploma.

PIANO FORTES AND ORGANS.

Judges—Wm. Dressler, Otto F. Jacobson, Luther B. Wyman.

James H. Grovestein, 122 Grand street, for the best piano forte. Gold medal.

T..Gilbert & Co., Boston, Mass., for second best piano forte, with Æolian attachment. Silver medal.

Wm. T. Reed, 44 West Fourteenth street, for a seven octave piano forte. Diploma.

Chas. J. Holder, 188 Spring street, for piano forte. Diploma.

James Pirsson, 87 Leonard street, for a double grand piano forte. Gold medal.

M. O Nichols, Boston, Mass., for a seraphine. Silver medal.

Milton M. Morse, Worcester, Mass., for an improved seraphine. Diploma.

SADDLERY, HARNESS AND WHIPS.

Judges—John B. Bull, P. Trainor, Robert R. Story.

Van Blarcom & Dixon, Paterson, N. J., for the best set of single harness. Silver medal.

Walter & Johnson, Haverstraw, N. Y., for the second best set of single harnes. Diploma.

Condict, Horton & Co., Newark, N. J., for a quilted somerset saddle. Silver medal.

Thomas Walke, 758 Broadway, for a neat plain shaftoe saddle. Diploma.

Chas. P. Caldwell, Philadelphia, Pa., for a splendid case of whips. Silver medal.

James Russel, 38 Pearl street, for neat whips. Diploma.

SHAWLS AND MUSLIN DE LAINES.

Judges—John Falconer, Wm. H. Lee, E. H. Leadbeater.

James Roy & Co., Watervliet Mills, N. Y., Hoyt & Tillinghast, agents, 54 Broad street, for the best woollen shawl. Gold medal.

Bay State Mills, Lawrence, Mass., Lawrence Stone & Co., agents, 41 Broadway, for second best wool shawl. Silver medal.

Waterloo Woolen Company, Waterloo, N. Y.. Macy, Stanton & Co., agents, 21 Broad street, for third best woollen shawl. Diploma.

Duncans & Cunningham, Franklin, Essex Co., N. J., McCurdy, Aldrich & Spencer, agents, 30 Broad street, for superior embroidered shawls. Gold medal.

Duncan & Co., Franklin, Essex Co., N. J., William Watson & Co., agents 43 Exchange Place, for superior printed shawls. Silver medal.

Oakland Worsted Company, Burville, R. I., W. C. Langley & Co., agents, 25 Broad street, for printed muslin de laines. Diploma.

H. Guerrier & Co., 122 Liberty street, for a specimen of cleaned Canton crape shawls. Diploma.

SIGN PAINTING AND BLOCK LETTERS.

Judges—Geo. G. Fordham, Samuel Alburtis, Jr., C. D. Cowenhoven.

George Steel, 10 Nassau street, for the best specimen of sign painting. Silver medal.

Jno. M. Brown, 2 Platt street, for the second best specimen of sign painting. Diploma.

Hale & Co. 80 Nassau street, for the best specimen of enamelling and writing on glass. Silver medal.

Edwards & Son, 157 Canal street, for the second best specimen of glass lettering and gilding. Diploma.

J. W. Jones, Brooklyn, L. I., for specimens of painting and enamelled sign. Diploma.

H. Kohler, Brooklyn, L. I., for the the best block letter sign. Silver medal.

Minor's Work.

Charles Dubois, 66 Vandam street, for the best sign painting. $5 and a certificate.

Gilbert Graham, 209 Duane street, for the second best specimen sign painting. $3 and a certificate.

J. H. Vanorden, 118 Bedford street, for a specimen of sign painting. Diploma.

Geo. McCarty, 163 Clinton street, for an excellent specimen of sign painting. Diploma.

J. G. Quirk, Brooklyn, L. I., for a specimen of painting. Diploma.

Wm. H. McCulley, 86 Fulton street, for sign painting. Diploma.

J. W. Gibbs, 6 Dover street, for a specimen of block letters. Diploma.

RAW SILK.

Judges—George M. Haywood, John W. Chambers.

John M. Summy, Lancaster, Pa., for the best specimen of raw silk. Van Schaick Premium of $10 and a Bronze medal.

Ira Howland, Pleasant Valley, Dutchess county, N. Y., for the second best specimens of raw silk. Silver medal.

Miss Harriett Summy, Lancaster, Pa., for the best bushel of peanut cocoons. Van Schaick Premium of $5 and a Bronze medal.

Miss Harriet Summy, Lancaster, Pa., for the best bushel of Paphos cocoons. Van Schaick Premium of $5 and Bronze medal.

Ira Howland, Pleasant Valley, Dutchess county, N. Y., for the second best specimen of cocoons. Diploma.

T. H. Byrnes, Comac, L. I., for a good specimen of cocoons. Diploma.

T. H. Byrnes, Comac, L. I., for a fine specimen of silk gut for fishing lines. Diploma.

MANUFACTURED SILK.

Judges—Henry A. Booræm, A. M. Cameron, J. T. Moulton.

F. S. Dumont, Paterson, N. J., for the best silk plush. Silver medal.

Haskell & Hayden, Windsor Locks, Conn., for the best sewing silk. Silver medal.

T. Euler, 59 Robinson street, for a beautiful specimen of watering on silk. Silver medal.

SILVER CHASING.

Judges—J. W. Hughes, Peter Van Ness.

Augustus Gangloff, Brooklyn, L. I., for the best specimen of chasing. Diploma.

Minor's work.

W. H. Wood, 94 Amos street, for the best specimen of chasing. $5 and a certificate.

Philip H. Storck, Hoboken, N. J., for the second best chasing. $3 and a certificate.

STATIONERY, PRINTING, &c.

Geo. F. Nesbit, Geo. C. Morgan, H. Jeroliman.

Platner & Smith, Lee, Mass., Francis & Loutrel, agents, 77 Maiden Lane, for very superior letter and ledger paper. Gold medal.

Price & Whiting, New-York, for superior straw board. Diploma.

Francis & Loutrel, 77 Maiden Lane, for best black, red and copying inks. Silver medal.

Myer Phineas, 118 William street, for well finished steel pens. Diploma.

H. Whiting, East Cambridge, Mass., for a patent inkstand. Diploma.

B. W. Raper, 312 Pearl street, for the best printed labels. Diploma.

S. E. Parish, c. Elm and Canal streets, for copying press stands. Diploma.

Francis Monroe, Concord, Mass., for superior black lead pencils for mechanical drawing. Diploma.

Wm. Holdredge, 140 Fulton street, for an improved letter and invoice file. Diploma.

STOVES, FURNACES AND RANGES—COOKING STOVES AND RANGES.

Judges—J. D. B. Sillman, John Gassner, Robert A. Gregory.

R. B. Thompson, 115 Beekman street, for the best stove. Silver medal.

Jordan L. Mott, 264 Water street, for a cooking stove, the best for the great mass of the people. Silver medal.

J. R. & E. N. Hyde, 258 Greenwich street, for a cooking stove and an apparatus for supplying hot air to an upper room. Diploma.

Warren, Sweetland & Co., Halfmoon, Saratoga county, N. Y., for a cheap serviceable stove. Diploma.

Jordan L. Mott, 264 Water Street, for the best cooking range, having hot water apparatus attached. Silver medal.

W. H. Bliss, Newport, R. I., Hall & Kenyon, agents, 92 Broadway, and 311 Third avenue, for a cooking range. Diploma.

William Cobb, 211 Water street, for a cooking range. Diploma.

W. P. Cresson, & Co., Philadelphia, for the best specimen of enamelled and tinned iron-ware. Silver medal.

STOVES FOR WARMING AND HOT-AIR FURNACES.

Judges—John Hecker, H. D. Sheppard.

J. D. Andrews, 210 Water street, for Olmstead's radiator stove. Silver medal.

R. Rollhaus, 250 Water street, for a Franklin grate, for its ingenious arrangement. Silver medal.

Warren, Sweetland & Co., Half-Moon, Saratoga county, N. Y., for the Saratoga coal burner, for neatness of design and superior workmanship, and its cheapness. Silver medal.

J. D. Andrews, 210 Water street, for a stove for its beauty of style. Diploma.

A. C. Barstow & Co., Providence, R. I., for a parlor stove. Diploma.

B. Wands & Co., 211 Water street, N. Y., for the best hot-air furnace. Silver medal.

Francis L. Hedenberg, 99 Division street, for the second best hot-air furnace. Diploma.

SURGICAL INSTRUMENTS.

Judges—D. M. Reese, John H. Whittaker, Isaac Greene.

Palmer & Co., Springfield, Mass., for the best artificial leg. A Gold medal having been before awarded. Diploma.

Marsh & Co , 2½ Maiden Lane, for the best trusses. Silver medal.

T. Mevis, 177 William street, N. Y., for an accurate and beautiful model of the human ear. Diploma.

James Gray, 157 Grand street, for superior artificial eyes. Diploma

TRUNKS, VALISES AND CARPET BAGS.

Judges—Edgar Farmer, John Black, S. H. Wheeler.

Peters & Martin, 338 Broadway, for the best specimen of sole leather trunks, valises, hat cases and leather bags. Silver medal.

C Walke, 758 Broadway, N. Y., for a trunk and hat case combined. Diploma.

Matthews & Hunt, 168 Pearl-street, N. Y., for superior carpet and leather bags. Diploma.

TOBACCO AND SNUFF.

Judges—J. R. Smith, G. L. Ford.

A. L. Bogert, 56 Vesey-street, for fine cut tobacco and snuff. Silver medal.

WIGS, ETC.

Judges—Julien Pierron, Frederick Gibbins, William Dibblee, Joseph A. Pozzoni.

W. J. Barker, 439 Broadway, N. Y., for the best ladies' wig. Silver medal.

Charles Bourgard, 5 Frankfort-street, N. Y., for the best gentleman's wig. Silver medal.

Minor's Work.

Louis Sevestre, 64 Mulberry-street, N. Y., for a gentleman's wig. $3.

WOOLEN GOODS.

Judges—J. A. Robertson, J. W. Corlies, Henry Shelden, William H. Scofield.

Dorastus Kellogg, Skaneateles, N. Y., Bowers & Beekman, agents, N. Y., for the best specimens of cassimeres. Gold medal.

J. & R. Hotchkiss, Hotchkissville, Conn., Atwater, Knapp & Woodruff, agents, 43 Broad-street, for the second best specimens of cassimeres. Silver medal.

R. Rodman, Allenton, Rhode Island, Marcus Spring & Co., agents, 51 Exchange Place, for the best merino cassimeres. Gold medal.

D. Reynolds, North Kensington, Rhode Island, Willard & Wood, agents, 40 and 42 Broad-street, for the second best specimens merino cassimeres. Silver medal.

Dean & Phillips, South Adams, Mass , for black cashmerets. Silver medal.

Utica Globe Mills, Utica, N. Y., for specimens of black cloths. Silver medal.

Rochdale Mills, Rochester, N. H., Nesmith & Co., agents, 52 Broad-street, for blankets. A gold medal having been before awarded, Diploma.

Waterbury Knitting Company, Waterbury, Connecticut, Atwater, Knapp & Woodruff, agents, 43 Broad-street, for the best Saxony wrappers. Silver medal.

Utica Company, Utica, N. B., Richardson & Co., agents, for the second best merino wrappers. Diploma.

Duncan & Co., Franklin, N. J., William Watson & Co., agents, Exchange Place, for piano and table covers. Gold medal.

Gardner & Morse, Boston, Mass., for worsted yarn and wadding. Diploma.

Gardner & Morse, Boston, Mass., for woolen hosiery. Diploma.

ZINC PAINTING.

Premiums offered the New-Jersey Exploring and Mining Company.

Judges—E. B. Derby, George Palmer, Richard Fosdick, John Marrenner, John Muckel.

J. W. Jones, Brooklyn, L. I., for the best flat and gloss white zinc painting. $100.

Asten & Seabury, 27 Nassau-street, for the second best flat and gloss white zinc painting. $50.

Radcliff Carman, 85 Barclay-street, for the third best flat and gloss white zinc painting. $25.

MISCELLANEOUS ARTICLES.

Judges—James R. Smith, William C. Arthur, William Ebbitt, Edwin Smith, G. L. Ford.

Louis Lucet, 492 Broadway, N. Y., for a specimen of bronze gilding. Silver medal.

John Bruce, 26 Platt-street, for steel copper plates. Diploma.

L. Branders & Co., for samples of bronze powder. Diploma.

Paul Goudey, 51 Franklin-street, for model of a circular stair case. Diploma.

Benjamin F. Miller, 37 Sullivan-street, for wrought iron picket fence. Diploma.

J. H. Doughty, 387 Grand-street, for specimens of sawed work for cornices. Silver medal.

Arnold & Co., Patent Merchandise Company, 240 Broadway, for specimens of terra cotta stands. Diploma.

Leonard Sence, 813 Broadway, N. Y., for marble stands. Diploma.

American Chair Company, Troy, N. Y., for patent centrifugal spring chairs, piano stools, ottomans, &c. A gold medal having been before awarded. Diploma.

John B. Wickersham, 61 Lewis-street, for a model of farm fence and specimens of wire railing. A silver medal having been before awarded, Diploma.

G. W. Gorum, 158 Water-street, for a good article of enamelled cloth. Diploma.

American Cork Company, corner Jane and Greenwich, T. G. Chamberlain, 28 South William-street, for a case of cork and cork soles. Diploma.

Calkins & Darrow, 34 Maiden Lane, for a case of umbrellas and canes. Diploma.

W. E. Rose, 37 Reade street, for a very superior case of gold and silver mounted canes. Silver medal.

Batchelor & Co., 66 Duane street, for specimens of rich iron furniture. Silver medal.

J. & S. C. Crombie, Nassau, New-Hampshire, N. P. Kimball, agent, 56 Beekman street, for a well made pine door. Silver medal.

Robert Yale, Coventry, N. Y., for a model of Mount Vernon. Diploma.

Mirror Mantel Company, Boston, George Walker, agent, 89½ Leonard street, N. Y., for a mirror mantel. Gold medal.

Edward Allen, So. Windham, Conn., J. G. Haviland, agent, for education table. Diploma.

J. B. Gailhard, 456 Broadway, N. Y., for the best bird cages. Diploma.

F. Rath, Williamsburgh, L. I., J. & C. Berrian, agents, 601 Broadway, for metallic bird cages. Diploma.

J. W. Bray, 955 Broadway, for a marble top iron stand. Silver medal.

Musgrove & Fisher, Amity street, J. & C. Berrian, agents, 601 Broadway, for coffee makers. Diploma.

J. & G. Crandall, 392 Madison street, for a hobby horse. Diploma.

Hydeville Company, Castleton, Vt., for white marble. Diploma.

S. Rossiter, 123 Fulton street, for zinc size gilding. Diploma.

Henry Stidolph, 6 Thompson street, for composition frames, gilding and imitation of French ormolu. Diploma.

W. H. Kemp, 95 Canal street, for gold leaf. A silver medal having been before awarded. Diploma.

Jetur Gardiner, 6 Grand street, for a specimen of plaster spreading. Diploma.

E. C. Dean, 36 South street, for a medicine chest. Diploma.

INDEX.

ILLUSTRATIONS.

Page.
Portrait of Clarkson Crolius, Sen'r, ...Frontispiece.
Plan of Cattle Ground, ... 24
Gatling's Grain Drill, ... 68
Harris & Sons' Smut and Scouring Machine, ... 70
Cary's Rotary Pump, ... 91
Self-stripping Carding Machines, ... 93

INDEX

Page.

Addresses, ... 219

Anniversary, ... 227

closing, ... 247

opening, ... 219

Agave Americana, ... 553

Agricultural school, project, ... 285

Agriculture for schools, ... 52

Alfalfa seed, from Valparaiso, ... 287, 545

Algæ, ... 385, 408

American prunes, ... 450

Analysis of Basalt, ... 317

Granite, ... 317

Johnson's soil, ... 348

Parsnips, ... 421

Sandstone, ... 317

Soot, ... 327

Ancient trees, ... 518

Anthracite coal, first introduction into the United States, ... 139

Apatite or phospate of lime, ... 264, 267, 355, 358, 386, 415

Apiary at Brooklyn, ... 361

Apple and cider of Normandy, ... 574

Apples, ... 499

Apricot, ... 523

Page.
Artificial stone, 113
Azalea, 535

Ball's communication on drain tiles, 159
Bean, 464
Bees, 361, 367, 527
Beets, 466
Bell's remarks on crossing and breeding cattle, 278
Blackberries, 545
Blake's artificial slate, 71
Blight of grapes, 529
Bone manure, 267, 333
Books from A. Vattemare, 62
Borden's meat biscuit, 393, 408
Bradley on plumbago and feldspar of New-Jersey, 206
Brazilian tea, 204

Cabbages, 464
Camellia, 536
Caoutchouc, 254
Carriages, sleighs, &c., 72
Carrots, 464
Cary's rotary pump, 91
Cattle, on the crossing and breeding of, 278
  roots, 128
Celery, 466
Cheap drains, 264
Chemistry, 365
Cherry trees, 506
Churns, 66
Clarkson Crolius, Sen., biographical notice of, 57

Page.

Clay's patent rolled taper iron, 111
Claussen's flax cotton, 565
Communications, 117
Compass and velocimeter, 204
Corn, 117
Corn and cob cracker, 66
Crossing and breeding cattle, 278
Croton aqueduct, action of roots on the, 566
Curculio, 524
Currants, 576
Cutlery, 75

Daniels' self-sharpening straw and stalk cutter, 69
Dearborn's letter, 274
De Witt on imported cattle, 161
Dignity of labor, 292
Donation of books from A. Vattemare, 62
Door spring, 77
Draining and under-draining, 174
Draining tile, 159
Dyes, 436, 467

Edge tools, 77
Embroidery and needle work, 79
Etherization of animals and of man, 166
Ewbank on the dignity of labor, 292

Farmers' Club proceedings, 251
    subjects, Apples, 491
        Apricots, 523
        Best method of keeping fruit in winter, 409

Page.
Blackberries, ... 545
Cherries, ... 506
Cultivation of roots, ... 322
Currants, ... 576
Gooseberries, ... 576
Nectarines, ... 523, 538
Pears, ... 556
Phosphate of lime, ... 264, 355, 376
Plums, ... 523, 538

Preservation of fruits, &c. 462
Grapes, ... 422
Quinces, ... 575
Raspberries, ... 345
Relative value of mineral manures, . 387
Strawberries, ... 578
Sub-soil ploughing and draining, .. 255
Under-draining and lime, ... 264

Farm of James Bathgate, report of committee on, ... 47
E. H. Kimball, ... 43
Fences and fencing farms, ... 186
Finances of the American Institute, ... 10
Fire-arms, ... 81
Fitz's equatorial telescope, ... 79
Flax and hemp breaking and dressing machine, ... 67
culture, ... 351
Flower gardens, report of committee on, ... 49
Food for plants, ... 331
Fowls, breed of, ... 532
Frauds in manure, ... 318

Page.

Freezing of vegetables and animals,........................ 489
French Merinos, origin of 212
Fruit in winter, best method of keeping,................. 409
Fruits of America,................................ 397
Fuel,................. 196

Gardening,...................................... 343
Gatling's grain drill,............................. 68
Germany, her agricultural industry and policy,........... 455
Gilbert on the origin of the French Merinos,............. 212
Giraud's communication on Indian corn, &c.,............. 117
Glass roofs for stables, ... 532
Godwin's presentation of pamphlets, ... 516
Goodsell on the products of Oswego county, ... 156
Gooseberries,................................. 252, 576
Gordon's job printing press,......................... 103
Grafting,.. 557
Grape, blight of the,............................... 529
Grapes, preservation of, ... 422
Guano, ... 533

Hall, Charles Henry, notice of the decease of,........ 215, 476
Hand tree, the 514
Harris's smut and scouring machine, ... 70
Hat made of pine leaves, ... 86
History and present condition and principles of agriculture, 555
Horner's farm in California,.......................... 435
Horticultural report,............................... 27
Humboldt's Cosmos, ... 531
Hungary, ... 399
Hyacinths, mode of raising,.......................... 533
Hydrophobia, a specific for curing,..................... 553

Page.
Ice marker and cutter, ... 92
Imported stock in 1799, ... 161
Indian corn, a new enemy to, ... 203
 varieties of, ... 117
Indigo, ... 436
 imports and exports of, ... 444
Insects injurious to agriculture, ... 530
Irrigation, ... 190

Jackson's anniversary address at the 24th annual fair, ... 227
 on etherization of animals and of man, ... 167
Johnson's experiment to improve the soil, ... 331, 347

Kew Gardens, ... 513

Langdon's communication, ... 146
Laysteyrie's treatise on pastel or woad, ... 436
Linen thread, ... 108
Livingston's opening address at the 24th annual fair, ... 219
Longevity of seeds, ... 572
Luminous plants, ... 533

Machinery at the 24th annual fair, notice of, ... 86
Madder, ... 467, 521
Mangel-wurtzel, ... 324, 558
Manures, ... 332, 287
Maynard's self-priming lock and priming, ... 85
Meigs' closing address at the 24th annual fair, ... 247
 on ancient trees, ... 518
Merino sheep, ... 212
Milch cows, ... 200
Mineral manures, ... 387

Page.
Model of a disabled ship, 104
Modern chemistry, its progress, 353
Moss or fruit trees, 419
Mott's improved stoves, 139
Mulching, 297

Naval architecture, 105
Nectarines, 523
Notices of articles at the 24th annual fair, 66
  Blake's artificial slate, 71
  Carriages, sleighs, &c., 72
  Cary's rotary pump, 91
  Churns, 66
  Clay's patent rolled taper iron, 111
  Corn and cob cracker, 66
  Cotton goods, 72
  Cutlery, table and pocket, 75
  Daniels' self-sharpening straw cutter, 69
  Door spring, Inman's, 77
  Edge tools, 77
  Embroidery and needle work, 79
  Equatorial telescope, 79
  Fire-arms, 81
  Flax and hemp breaking machine, 67
  Gatling's grain drill, 68
  Gordon's job printing press, 103
  Harris's smut and scouring machine, 70
  Hat made of pine leaves, 86
  Ice marker and cutter, 92
  Machinery at the late fair, 86
  Manufacture of linen thread, 108

Page.
Maynard's self-priming lock and priming, 85
Modelling, 104
Model of a disabled ship, 104
Naval architecture, 105
Palmer's improved patent artificial leg, 105
Pearl and shell work, 107
Perley's capstan and vertical windlass, 89
Protean chair, 109
Rockingham ware, 110
Self-stripping carding machine, 93
Terra-cotta or artificial stone, 113
Wine, 70
Young Elms in the Crystal Palace, 570
Zinc paints, 115

Onions, 466
Orchards, to produce good and early, 562
Oswego county, 156

Painters' colic, 366
Palmer's improved artificial leg, 105
Parsnips, culture of, 420, 465
Payen's report on the preserved food of Mr. Masson, 517
Peaches, 483, 495
Pearl and shell work, 107
Pears, 556
Pell on fences and fencing farms, 186
Penrith Farmers' Club, 418
Perley's compound capstan and vertical windlass, 89
Phosphate of lime, 264, 267, 355, 358, 386, 415
Pine apple, culture of, 536
Plan of the cattle ground, 25

Page

Planting fruit trees for others, ... 511

Plants, ... 534

Plums and apricots, ... 523, 538

Poultry, ... 340

Premiums awarded at the cattle show, ... 585

24th annual fair, ... 585, 595

Preservation of fruit, ... 252, 422

Proceedings of the Farmers' Club, ... 251

Progress of institutions for promoting science, &c., ... 163

Protean chair, ... 109

Quince tree, ... 575

Raspberries, ... 252, 545

Receipts and disbursements of the Institute, ... 10

24th fair, ... 14

Relative value of mineral manures, ... 387

Relic of the Revolution, ... 163

Report on Bartlett's Commercial and Banking Tables, ... 53

Blake's Lessons in Modern Farming, ... 52

Fisher's steam carriage, ... 55

the American School of Mines, ... 56

of the Committee on Agriculture, ... 21

Farms, ... 43

Horticulture, ... 27

Trustees, ... 7

Judges on fine wool sheep, ... 51

Testing ploughs, ... 51

Rockingham ware, ... 110

Root crops, ... 310

Roseworts or Rosaceæ, ... 574

Page.
St. John's variation compass and velocimeter, ... 204
Self-stripping carding machine, ... 93
Soot, analysis of, ... 327
value of, ... 532
Stables, glass roof for, ... 532
Staindrop Farmers' Club, ... 451
Strawberries, ... 545
Strawberry cultivation, ... 307
Sub-soil ploughing and draining, ... 255, 388
Super-phosphate of lime, ... 377

Taylor on draining, ... 339
Tea, ... 349
from Brazil, ... 204
made of leaves of the coffee tree, ... 551
Telescope, Fitz's equatorial, ... 79
Tenth annual report of the trustees, ... 7
Terra-cotta or artificial stone, ... 113
Theophrastus, works of, ... 401
Timber, ... 543
Translations by Henry Meigs:
American prunes, ... 450
Colonization and Agriculture of Algeria, ... 509
Cultivation of the pine apple, ... 536
Culture of melons by slips, ... 251
Date palm of Africa, ... 253
Dietetic properties of the carrot, ... 350
Drain tile machine, ... 291
Encouragement of horticulture at St. Petersburg, ... 551
Evaporation tubes for hay mows, ... 554
from works of Theophrastus, ... 404

Page.
Flowering of the Nelumbium Speciosum, ... 478
Fuchsia, ... 289
Gardens of France, ... 282
Kew, ... 513
Germany, her agricultural industry and policy, ... 455
Herpin's memoirs of insects injurious to agriculture, 530
History and present condition of agriculture, ... 555
Importation of dried bananas into England, ... 568
Le Bon Jardinier Almanac, ... 392
Le Hanniton—The May bug, ... 291
Moss on fruit trees, ... 419
New mode of moulding porcelain, ... 352
New plants cultivated by Linden at Brussels, ... 519
Nursery trees, ... 334

Onion of Nocera, ... 513
Orchidea, ... 520

Plant louse, ... 266
Plants—Des Genres, Camellia Rhododendrum, Azalea, Epacris and Erica, ... 534
Precepts in practical agriculture, ... 487
Preservation of fruits, ... 251, 288
Milk, ... 327

Report on Masson's prepared vegetables, ... 393
works exchanged by A. Vattemare, ... 391
Researches on the bran of wheat and other grains, .. 420

Smith's parsley, ... 291
Statistics of agriculture in France, ... 511

Page.
Tea, ... 349
Timber, ... 543
Transplanting large trees, ... 450

Victoria Regia, ... 47
Trustees and Committees for 1851, ... 3

Under-draining, ... 174, 264

Van Wyck on draining and under-draining, ... 174
Irrigation, ... 190
Milch cows, ... 200
Vattemare, donation of books from, ... 62
Varieties and economy of fuel, ... 196
Vegetables, respiration of, ... 533

Wallichia Densiflora, ... 519
Western World Institute, ... 164
Wheat growing without ploughing or spading, ... 380
Williams' address before the Western World Institute, ... 429
letters from, ... 428, 454
Wine, ... 70

Zinc painting, ... 115, 329

INDEX

TO

ASSEMBLY DOCUMENTS, 1852.

A.

No.

Academies, report on application of Fairfield academy, ... 63
Accidents, report relative to accidents on railroads,........ 82
Adams, Horace, report on petition of,..................... 29
Adjutant General, annual report of,....................... 7
Administration of justice, report on the, (see New-York,) .. 97
Affidavits, relative to the claim of Marcus Brown,......... 96
Agricultural Institution, report on Governor's message relative to the,........ 100
Agricultural Society, Transactions of the,................ 126
Albany bridge, report on bridging the river at Albany, ... 115
Albany and Schenectady Turnpike Co., report on application of the, to abandon part of their road,............... 110
American Institute, Transactions of the, ... 129
Assembly, list of members with counties and Assembly districts,.................................. 2
  rules and orders of the, of last year,............. 3
  standing committees of the, ... 5
  rules and orders of 1852, ... 12
  list of members and officers with residence, &c.,... 13
  joint rules of Senate and Assembly,............. 36
  general orders of the, ... 52

No.

Assembly, list of members, with their places of birth, age, occupation, &c., ... 128
Attorney General, see report of Secretary of State respecting books purchased by the, ... 120
Auditor Canal Department, report containing estimates for expenses of the canals, ... 116
report relative to the expenditures on the canals, ... 125

B.

Babcock, John H. and others, report on petition of, ... 47
Baldwin, Wm. W. and Catharine V. S., report on petition of for relief, ... 79
Banks, report of Commissioners respecting unclaimed deposits and dividends in, ... 127
Banking Department, annual report of the Sup. of the, ... 9
Bargy, Peter, jun., deceased, report on petition of P. Cagger, administrator of, ... 75
Bates, Lorenzo, report on bill for relief of, ... 48
Becker, Peter, report on the petition of, ... 38
Big Chazy river, report relative to improving navigation of,. 57
Bigham, Andrew, report on the petition of, for relief, ... 83
Bills, list of bills in committee of the whole, and unacted on, March 20, 1852, ... 95
Books, purchased by the Attorney General, ... 120
Bridges, report on bill of Genesee Suspension Bridge Co., ... 45
see report on petition of authorities of Lansingburgh for a toll bridge, ... 77
report respecting bridge at Albany, ... 115
Bridging river at Albany, ... 115
Brown, Marcus, report on the petition of, for relief, ... 76
affidavits relative to the claim of, ... 96

C.

Cagger, Peter, administrator, report on petition of, ... 75
Caldwell, G. & J. W., report on their petition, ... 71
Canal Board, to hear and determine the claim of A. Rockwell & Co., ... 72

No.

Canal Commissioners, annual report of, 33
Canal Fund, report of the Commissioners of the, 15
Canal lettings, report of joint select committee on, 89
Central New-York Eclectic Medical College, report on the petition and bill to incorporate the, 108
Chancery, see report on the funds of the court of, 56
Chazy river, Big, report on petitions to improve navigation of, 57
Clemens, Joshua W., report on petition of, 54
Clerk of the Assembly, see report of Comptroller in answer to resolutions of the Assembly in relation to refunding to the Clerk amount advanced for postage stamps, &c., 124
Clinton State Prison, see report relativo to iron works at, 62
Cobb, Edwin H., report on bill for the relief of, 16
Codifying the Common School Law, report of the commissioners for, 21
Colleges. Metropolitan College, report against a charter for, 87
Colonization, report in relation to, 44
Commissioners of Emigration, see report of select committee to examine into the condition, &c., of the trusts under charge of the, 34
Commissioners of the Land Office, report respecting an act granting land under water in the town of Westfield, 121
Commissioners of Canal Fund, annual report of the, 15
Commissary General, annual report of the, 26
Committees. Standing committees of the Assembly, 5
  To examine the State Prisons, report, 20
Common Schools, see report of commissioners to codify the 21
  Annual report of Superintendent of, 25
Comptroller, annual report of the, 10
  Report respecting receipts into the General Fund and time of holding tax sale, 103
  Report respecting unsold lands, 105
  Report in answer to resolutions respecting his refusing to refund to the clerk amount advanced by said clerk for postage stamps, &c., 124

No.

Contested seat, see report on the contested seat claimed by Job G. Elmore,........................ 28
See minority report on contested seat of Russel Smith,............................. 46
Pay to Job G. Elmore,.................... 65
Cornwall, Augustus, report on petition of, for relief,....... 113
Corporations, see report on petition of corporate authorities of Lansingburgh for toll bridge,....................... 77
Crandall, Clark, report on petition of, for relief,........... 106
County clerks, report of Secretary of State respecting fees of, 118
Court of Chancery, see report respecting funds of the,..... 56

D.

Deaf and Dumb, annual report and documents of the institution for instructing the............................. 112
Defendorf, Charles and David, report on the petition of.... 68
Delaware and Hudson Canal Co., report respecting violation of the charter of the..... 60
minority report as to violation of charter,.............. 70
Division, report relative to the division of Wayne Co.,... 67, 55
Divorce, report on the subject of,........................ 73
Dundee Salt Springs, report on petition of G. P. Ross and others, in relation to testing the 91
Dunning, Jonathan O., report on petition of,.............. 59

E.

Education, see memorial of E. Willard and others, on female education,................................ .... 117, 74
Elmore, Job G., report on the petition of, claiming seat held by Jacob Westbrook, Jr., ... 28
report on resolution to pay him while contesting the seat of Jacob Westbrook, Jr.,......... 65
Emigration, report of committee to examine into the condition, &c , of the trusts under charge of the com. of 34
Frie Canal Feeder, report on petition of citizens of Rochester in relation to the,............................. 109

d by Google

F.

Fairbank, Dexter, and others, see report of Commissioners Land Office, respecting land under water at Westfield,. 121
Fairfield Academy, report on the application of trustees of 63
Farm, Agricultural Institution and,.................... 100
Folts, George, report on the petition of,.................. 37
Foreman, Winfield S., report on petition of, for damages,... 80
Funds, see report of the funds of the Court of Chancery,... 56

G.

General Fund, report of Comptroller relative to receipts into the,.. 103
General Insurance Law, 1849, report on the act to amend the act of the,...................................... 99
General orders of the Assembly,........ 52
Genesee river, occupancy of waters of Genesee river, at Rochester,.. 102
Genesee Suspension Bridge Co., report on the bill entitled the, ... 45
Goodsell, Thomas, report on petition of,................. 51
Governor, Annual Message of the,........................ 1
Graves, Jacob and others, report on memorial relative to occupancy of the waters of Genesee river at Rochester,... 102

H.

Hartman, John, report on petition of, ... 94
Hill, Wm. S. and others, see report of Commissioners of the Land Office respecting land under water at Westfield,. 121
Horton, Allen W. report on the petition of, ... 31
Houseaur, Michael, report on petition of, for relief, ... 98
Hulburt, Levi, report on petition of, ... 58
Hulse, David, report on petition of,...................... 59

I.

Indians, see report in regard to claim of purchasers of lands from the Oneida,.................................... 61

No.

Inspector General, annual report of the,.................. 8

Insurance, report on the act to amend the general Insurance Law, of 1849,.................................. 99

Institution, see report relative to the Agricultural,........ 100

Interest, see report on petition of O. Poole for payment of interest,.................................... 84

report on claim of H. Showdy for,.......... 86

Intemperance, report relative to the adoption of stringent means for the supervision of,...................... 88

Iron, works for manufacture of Iron at Clinton Prison,..... 62

J.

Joint Rules of the Senate and Assembly, 1852,............ 36

Justice, report on the administration of justice in New-York, 97

K.

King, Dexter S. and others, see report of Commissioners of the Land Office, respecting the granting of land under water at Westfield,.............................. 121

Knapp, Aaron, report on the petition of,................. 32

L.

Lafoy, John, report on the petition of,.................. 54

Land Office, see report of the Commissioners of the Land Office respecting the granting of land under water at Westfield,.. 121

Lands unsold, report of Comptroller relative to,........... 105

Lansingburgh, report on the petition of the corporate authorities of, for a toll bridge,.......................... 77

Laws, codification of common school,..................... 21

Lettings, see report on canal letting,..................... 89

Le Valley, Franklin, report on petition of,............... 18

Libby, James S. and others, see report of Commissioners of the Land Office on the bill granting lands under water at Westfield,................................... 121

No.

Life insurance, report on petitions and memorials, in reference to the business of, ... 111
List of bills, in committee of the whole, and unacted on March 20, 1852, ... 95

M.

Manorial lands, report on the petition of tenants upon, for relief, ... 92
Mears, James R., & Wm., report on the petition of, ... 24
Medical College, report to incorporate the "Central New-York Eclectic Medical College" at Rochester, ... 108
Mechanics' and Traders' Savings Institution, N. Y., see report of minority upon bill to incorporate the, ... 40
Medical Society, Transactions of the, ... 85
Members, names of members of the Assembly, ... 2
  List of, and officers, with place of residence, &c., 13
Merrill, John, report on the petition of, ... 66
Message, of the Governor, (annual,) 1
Metropolitan College, minority report against a charter for the, 87

N.

Names of members of the Assembly, ... 2
  of standing committees, ... 5
Natural History, report of commissioners to superintend the completion of the printing of the, ... 23
  Annual report of Regents of the University, ... 122
New-York Mechanics' and Traders,' Savings Institution of, . 40
  administration of justice in, report, ... 97
New-York Prison Association, annual report of the, ... 123
New Paltz, report on petition of inhabitants for the erection of a new town, ... 107
Normal school, cause of panic at public exercises of the, ... 119

O.

No.

Oneida Indians, report on claims of purchasers of lands from the, ... 61
Orders, rules and, of the Assembly last year, ... 3
  general, ... 52
Oswegatchie river, report on bill for an appropriation to improve the, ... 93

P.

Patent, Woodworth's, extension of, ... 64
Philips, John C., report on petition of, ... 47
Poole, Oliver, report on petition of, for relief, ... 84
Prescott, Ebenezer, report on petition of, ... 39
Prison Association, annual report of the, ... 123

R.

Railroads, annual report of State Engineer and Surveyor, ... 27
  report relative to accidents on, ... 82
Ransom Lewis, report on petition of, ... 47
Rector, Henry, report on the petition of, ... 53
Regents of the University, annual report of the, ... 122
Reports, Adjutant General's (annual,) 7
  Agricultural Institution and farm, ... 100
  Attorney General's, (books,) 120
  Auditor's report, estimates for expenses of the canals 116
    expenditures on the canals, ... 125
  Colozination, ... 44
  Commissary General's annual report, ... 26
  Commissioners of Canal Fund, (annual,) 15
  Commissioners of emigration, ... 34
  Commissioners of the Land Office, lands under water at Westfield, ... 121
  Commissioners to superintend the completion of the printing of the Natural History, ... 23
  Common school law, on codifying the, ... 21
  Committee to examine the State Prisons, ... 20
  Canal Commissioners', annual, ... 33
  Canal lettings, report on, ... 89

No.

- Report, Comptroller's annual, ... 10
    - about receipts into the General Fund and time of holding tax sale, ... 103
    - in answer to resolutions of the Assembly in regard to the amount advanced by the clerk for postage stamps, ... 124
  - county clerks' fees, see report of Secretary of State, 118
  - deaf and dumb, ... 112
  - Emigration, Commissioners of, ... 34
  - funds in court of chancery, ... 56
  - general insurance law of 1849, ... 99
  - Inspector General's, annual, ... 8
  - insurance law of 1849, report on the act to amend, 99
  - intemperance, suppression of, ... 88
  - Joint committee to examine treasurer's accounts, .. 14
  - Land Office Commissioners, land under water at Westfield, ... 121
  - Manorial lands, on petition of tenants, ... 92
  - Medical Society, Transactions, ... 85
  - Onondaga salt springs, ... 43
  - Prison Association, report of the, ... 123
  - Regents of the University, annual report, ... 122
  - Secretary of State, respecting books purchased by the Attorney General, ... 120
    - in reference to session laws, ... 11
    - common school report, ... 25
    - respecting fees of county clerks, 118
  - State Engineer and Surveyor, on canals, ... 90
    - of railroadsof New-York, ... 27
  - State library building, ... 42
  - Superintendent banking department, annual, ... 9
    - common schools, ... 25
    - Onondaga salt springs, ... 43
  - suppression of intemperance, ... 88
  - Transactions of Medical Society, ... 85
  - Treasurer's accounts, committee to examine the, .. 14
    - annual, ... 6

No.

Report, Trustees State library building, ... 42
unclaimed deposits and dividends in banks,...... 127
Resolutions, report on reference of a resolution relating to State prisons,.................... 114
Rivers, improvement of Oswegatchie river,............... 93
Rochester city, report on petition and bill to incorporate the central New-York eclectic Medical College in the city of Rochester,............... 108
report on petition of citizens of, in relation to canal feeder, ... 109
report on petition of citizens of Rochester in relation to Erie canal feeder,........... 109
Rochester, (town,) report on petition of inhabitants of Shawangunk, New Paltz and Rochester, Ulster co., for the erection of a new town,.............................. 107
Rockwell, Andrew & Co., report on petition of, for a law authorizing the Canal Board to hear and determine their claim, ... 72
Ross, George P. and others, report on petition of, for aid in testing the value and availability of the Dundee salt springs,.. 91
Ross, Mahlon, report on petition of for relief,............. 101
Rules and orders of the Assembly of last year,............. 3
of the Assembly for 1852,............... 12
Joint rules of the Senate and Assembly, .. 36

S.

Sage, Hezekiah, report on petition of,.................... 69
Saving Institution, minority report upon incorporating the Mechanics' and Traders Saving Institution, N. Y.,..... 40
Sears, Eliphalet, report on the petition of,................. 29
Secretary of State, report of, in reference to Session Laws,.. 11
annual report of, as Superintendent of Common Schools,........ 25
report relative to fees of County Clerks,. 118
report respecting books purchased by the Attorney General,.................. 120
Session Laws, see report of Secretary of State, in reference to, 11

No.

Seymour, A. & Co., report on the petition of,.............. 41
Shawangunk, report on petition of inhabitants for a new town,.. 107
Showdy, Henry, report on petition of, for pay of interest, .. 86
Smith & Co., (of Canajoharie,) report on petition for relief,. 104
Smith, Russell, minority report in relation to his seat, ... 46
Snow, Ephraim L., minority report about seat held by,..... 46
Sons of Temperance, report on petition of the,............ 50
South East, report on petition of the Sons of Temperance of, 50
State Engineer and Surveyor, annual report of the, on railroads,.......................... 27
State Library building, report of Trustees of,.............. 42
State Normal School, report respecting causes of the panic attending late public exercises at the, ... 119
State Prisons, report of committee to examine the,......... 20
 iron works at Clinton State Prison,.......... 62
 report on reference of a resolution relating to, 114
Sternburgh, Wm., report on the petition of, ... 30
Superintendent of Common Schools, annual report of the,... 25
Superintendent Banking Department, annual report of,.... 9
Superintendent Onondaga Salt Springs, annual report of,... 43
Suppression of intemperance, ... 88

T.

Tax sale, see report of Comptroller relative to time of holding the,.. 103
Temperance, see report on petition of the Sons of, of Southeast,.. 51
Thurman, Washington, report on petition of, for relief,..... 17
Transactions, of the Medical Society,..................... 85
 State Agricultural Society,........... 126
 American Institute,.................. 129
Treasurer, annual report of the,.......................... 6
 report of com., to examine accounts of the,..... 14
Troy Female Seminary, see report on memorial of Emma Willard,.................................... 71, 117
Trustees, of State Library building, report of,............ 42

No.

Trustees of Westfield, report of Commissioners of the Land Office, respecting land under water at Westfield,...... 121
Turnpikes, report on application of Albany and Schenectady Turnpike Co., to abandon part of their road,......... 110

U.

Ulster county, erection of a new town in,................ 107
Unclaimed deposits and dividends, report of commissioners appointed by the Comptroller to enquire into and ascertain amount of,............................ 127
Unsold lands, report in relation to,...................... 105

V.

Van Alstyne, Charity report on the petitition of, for relief, 78, 19
Van Inwagen, Anthony, report on petition of, ... 49
Vroman, Charles, do do 58

W.

Wayne county, report relative to division of,.............. 55
minority report in relation to the division of, 67
Westbrook, Jacob Jr., see report of committee on petition of Job G. Elmore, claiming seat of,...... 28
see report to pay Job G. Elmore, Jr.,...... 65
Westfield, see report of Commissioners of Land Office, respecting the granting of land under water, at......... 121
Willard, Emma, and others, memorial of, relative to female education,.................................... 117, 74
Williams, William H., report on petition of, for relief, ... 81
Willis, Joseph, report on petition of, for relief,............ 4
Wood, Seymour S., report on petition of,................. 35
Woodworth patent, minority report in relation to the extension of the 64
Worrell, Joshua, report on the petition of 22

UNIVERSITY OF MICHIGAN
3 9015 06794 5355

BOUND

SEP 18 1942

UNIV. OF MICH.
LIBRARY